**3GPP TSG-RAN WG4 Meeting #115 *R4-2507919***

**Malta, 19th – 23rd May 2025**

|  |
| --- |
| *CR-Form-v12.3* |
| **CHANGE REQUEST** |
|  |
|  | **38.141-1** | **CR** | **zzzz** | **rev** | **-** | **Current version:** | **19.0.0** |  |
|  |
| *For* [***HE******LP***](http://www.3gpp.org/3G_Specs/CRs.htm#_blank)*on using this form: comprehensive instructions can be found at* [*http://www.3gpp.org/Change-Requests*](http://www.3gpp.org/Change-Requests)*.* |
|  |

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| ***Proposed change affects:*** | UICC apps |  | ME |  | Radio Access Network | **x** | Core Network |  |

|  |
| --- |
|  |
| ***Title:***  | draftCR to 38.141-1 on introduction of RF requirements for 7MHz channel bandwidth |
|  |  |
| ***Source to WG:*** | Nokia |
| ***Source to TSG:*** | R4 |
|  |  |
| ***Work item code:*** | NR\_FR1\_7MHz\_BW-Perf |  | ***Date:*** | 2025-05-20 |
|  |  |  |  |  |
| ***Category:*** | **B** |  | ***Release:*** | Rel-19 |
|  | *Use one of the following categories:****F*** *(correction)****A*** *(mirror corresponding to a change in an earlier release)****B*** *(addition of feature),* ***C*** *(functional modification of feature)****D*** *(editorial modification)*Detailed explanations of the above categories canbe found in 3GPP [TR 21.900](http://www.3gpp.org/ftp/Specs/html-info/21900.htm). | *Use one of the following releases:Rel-8 (Release 8)Rel-9 (Release 9)Rel-10 (Release 10)Rel-11 (Release 11)…Rel-17 (Release 17)Rel-18 (Release 18)Rel-19 (Release 19) Rel-20 (Release 20)* |
|  |  |
| ***Reason for change:*** | Introduction of requirements for 7MHz channel bandwidth. |
|  |  |
| ***Summary of change:*** | Relevant Clauses are updated. |
|  |  |
| ***Consequences if not approved:*** | No requirements for 7MHz channel bandwidth. |
|  |  |
| ***Clauses affected:*** | 4.1.2.2, 6.3.3.5, 6.3.4.5, 6.5.3.5, 6.6.2.4.2, 6.6.3.5.2, 7.2.5, 7.3.5, 7.4.1.5, 7.4.2.5, 7.7.5, 7.8.5 |
|  |  |
|  | **Y** | **N** |  |  |
| ***Other specs*** | **x** |  |  Other core specifications  | TS 38.104 CR zzzz |
| ***affected:*** |  | **x** |  Test specifications | TS/TR ... CR ... |
| ***(show related CRs)*** |  | **x** |  O&M Specifications | TS/TR ... CR ...  |
|  |  |
| ***Other comments:*** |  |
|  |  |
| ***This CR's revision history:*** |  |

\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\* **< START OF CHANGE >** \*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*

#### 4.1.2.2 Measurement of transmitter

Table 4.1.2.2-1: Maximum Test System uncertainty for transmitter tests

| Clause | Maximum Test System Uncertainty | Derivation of Test System Uncertainty |
| --- | --- | --- |
| 6.2 Base Station output power | ±0.7 dB, f ≤ 3 GHz±1.0 dB, 3 GHz < f ≤ 7.125 GHz (Note)±1.5 dB, for bands n46, n96 and n102 |  |
| 6.3 Output power dynamics | ± 0.4 dB |  |
| 6.4.1 Transmit OFF power | ±2.0 dB, f ≤ 3 GHz±2.5 dB, 3 GHz < f ≤ 7.125 GHz (Note)±3 dB, for bands n46, n96 and n102 |  |
| 6.4.2 Transmitter transient period | N/A |  |
| 6.5.2 Frequency error | ± 12 Hz |  |
| 6.5.3 EVM | ± 1% |  |
| 6.5.4 Time alignment error | ± 25ns |  |
| 6.6.2 Occupied bandwidth | 3 MHz BS Channel BW: ±30 kHz5 MHz, 7 MHz, 10 MHz BS Channel BW: ±100 kHz15 MHz, 20 MHz, 25 MHz, 30 MHz, 35 MHz, 40 MHz, 45 MHz, 50 MHz BS Channel BW: ±300 kHz60 MHz, 70 MHz, 80 MHz, 90 MHz, 100 MHz BS Channel BW: ±600 kHz |  |
| 6.6.3 Adjacent Channel Leakage power Ratio (ACLR) | ACLR/ CACLRBW ≤ 20MHz: ±0.8 dBBW > 20MHz: ±1.2 dBAbsolute power ±2.0 dB, f ≤ 3 GHzAbsolute power ±2.5 dB, 3 GHz < f ≤ 7.125 GHz (Note)Absolute power ±3 dB, for bands n46, n96 and n102CACLRBW ≤ 20MHz: ±0.8 dBBW > 20MHz: ±1.2 dBCACLR absolute power ±2.0 dB, f ≤ 3 GHzCACLR absolute power ±2.5 dB, 3 GHz < f ≤ 7.125 GHz (Note)CACLR absolute power ±3 dB, for bands n46, n96 and n102 |  |
| 6.6.4 Operating band unwanted emissions | ±1.5 dB, f ≤ 3 GHz±1.8 dB, 3 GHz < f ≤ 7.125 GHz (Note)±2.2 dB, for bands n46, n96 and n102 |  |
| 6.6.5.5.1.1 Transmitter spurious emissions, Mandatory Requirements | 9 kHz < f ≤ 4 GHz: ±2.0 dB4 GHz < f ≤ 19 GHz: ±4.0 dB19 GHz < f ≤ 26 GHz: ±4.5 dB |  |
| 6.6.5.5.1.2 Transmitter spurious emissions, Protection of BS receiver | ±3.0 dB |  |
| 6.6.5.5.1.3 Transmitter spurious emissions, Additional spurious emission requirements | ±2.0 dB for > -60 dBm, f ≤ 3 GHz±2.5 dB, 3 GHz < f ≤ 4.2 GHz±3.0 dB, 4.2 GHz < f ≤ 7.125 GHz (Note)±3.0 dB for ≤ -60 dBm, f ≤ 3 GHz±3.5 dB, 3 GHz < f ≤ 4.2 GHz±4.0 dB, 4.2 GHz < f ≤ 7.125 GHz (Note)±4.0 dB, for bands n46 and n96 |  |
| 6.6.5.2.4 Transmitter spurious emissions, Co-location | ±3.0 dB |  |
| 6.7 Transmitter intermodulation(interferer requirements)This tolerance applies to the stimulus and not the measurements defined in 6.6.3, 6.6.4 and 6.6.5 | The value below applies only to the interfering signal and is unrelated to the measurement uncertainty of the tests in 6.6.3 (ACLR), 6.6.4 (OBUE) and 6.6.5 (spurious emissions) which have to be carried out in the presence of the interferer.±1.0 dB | The uncertainty of interferer has double the effect on the result due to the frequency offset |
| NOTE: Test system uncertainty values for 3 GHz < f ≤ 7.125 GHz apply for BS operates in licensed spectrum only. |

\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\* **Unchanged Section Omitted** \*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*

#### 6.3.3.5 Test requirements

The downlink (DL) total power dynamic range for each NR carrier shall be larger than or equal to the level in table 6.3.4.5-1.

Table 6.3.3.5-1: BS total power dynamic range

|  |  |
| --- | --- |
| NR channel | Total power dynamic range (dB) |
| bandwidth (MHz) | 15 kHz SCS | 30 kHz SCS | 60 kHz SCS |
| 3 | 11.3 | N/A | N/A |
| 5 | 13.5 | 10 | N/A |
| 7 | 15.0 | N/A | N/A |
| 10 | 16.7 | 13.4 | 10 |
| 15 | 18.5 | 15.3 | 12.1 |
| 20 | 19.8 | 16.6 | 13.4 |
| 25 | 20.8 | 17.7 | 14.5 |
| 30 | 21.6 | 18.5 | 15.3 |
| 35 | 22.3 | 19.2 | 16.0 |
| 40 | 22.9 | 19.8 | 16.6 |
| 45 | 23.4 | 20.3 | 17.2 |
| 50 | 23.9 | 20.8 | 17.7 |
| 60 | N/A | 21.6 | 18.5 |
| 70 | N/A | 22.3 | 19.2 |
| 80 | N/A | 22.9 | 19.8 |
| 90 | N/A | 23.4 | 20.4 |
| 100 | N/A | 23.9 | 20.9 |

NOTE: Additional test requirements for the EVM at the lower limit of the dynamic range are defined in clause 6.5.4.

\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\* **Unchanged Section Omitted** \*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*

#### 6.3.4.5 Test requirements

NB-IoT RB power dynamic range for NB-IoT operation in NR in-band shall be larger than or equal to the level specified in Table 6.3.4.5-1 or the NB-IoT power dynamic range declared by the BS manufacturer (D.43). This power dynamic range level is only required for one NB-IoT RB.

Table 6.3.4.5-1: NB-IoT RB power dynamic range for NB-IoT operation in NR in-band

|  |  |  |
| --- | --- | --- |
| BS channel bandwidth (MHz) | NB-IoT RB frequency position | NB-IoT RB power dynamic range (dB) |
| 3, 5, 7, 10 | Any | +5.6 |
| 15 | Within center 77\*180kHz+15kHz at each edge | +5.6 |
|  | Other | +2.6 |
| 20 | Within center 102\*180kHz+15kHz at each edge | +5.6 |
|  | Other | +2.6 |
| 25, 30, 35, 40, 45, 50, 60, 70, 80, 90, 100 | Within center 90% of BS channel bandwidth | +5.6 |
|  | Other | +2.6 |

\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\* **Unchanged Section Omitted** \*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*

#### 6.5.3.5 Test requirements

The EVM of each NR carrier for different modulation schemes on PDSCH shall be less than the limits in table 6.5.3.5-1.

Table 6.5.3.5-1 EVM requirements for *BS type 1-C* and *BS type 1-H*

|  |  |
| --- | --- |
| Modulation scheme for PDSCH | Required EVM (%) |
| QPSK | 18.5 % |
| 16QAM | 13.5 % |
| 64QAM | 9 % |
| 256QAM | 4.5 % |
| 1024QAM | 3.5 %13.8 %2 |
| NOTE 1: This requirement is applicable for frequencies equal to or below 4.2 GHz.NOTE 2: This requirement is applicable for frequencies above 4.2 GHz. |

EVM shall be evaluated for each NR carrier over all allocated resource blocks and downlink slots. Different modulation schemes listed in table 6.5.3.5-1 shall be considered for rank 1.

For all bandwidths, the EVM measurement shall be performed for each NR carrier over all allocated resource blocks and downlink slots within 10 ms measurement periods. The boundaries of the EVM measurement periods need not be aligned with radio frame boundaries.

Table 6.5.3.5-2, 6.5.3.5-3, 6.5.3.5-4 below specify the EVM window length (*W*) for normal CP for *BS type 1-C* and *BS type 1-H*.

Table 6.5.3.5-2 EVM window length for normal CP for NR, FR1, 15 kHz SCS

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Channelbandwidth (MHz) | FFT size | Cyclic prefix length for symbols 1‑6 and 8-13 in FFT samples | EVM window length *W* | Ratio of *W* to total CP length for symbols 1‑6 and 8-13 (%)(Note) |
| 3 | 256 | 18 | 8 | 44.4 |
| 5 | 512 | 36 | 14 | 40 |
| 7 | 1024 | 72 | 28 | 40 |
| 10 | 1024 | 72 | 28 | 40 |
| 15 | 1536 | 108 | 44 | 40 |
| 20 | 2048 | 144 | 58 | 40 |
| 25 | 2048 | 144 | 72 | 50 |
| 30 | 3072 | 216 | 108 | 50 |
| 35 | 3072 | 216 | 108 | 50 |
| 40 | 4096 | 288 | 144 | 50 |
| 45 | 4096 | 288 | 144 | 50 |
| 50 | 4096 | 288 | 144 | 50 |
| Note: These percentages are informative and apply to a slot's symbols 1 to 6 and 8 to 13. Symbols 0 and 7 have a longer CP and therefore a lower percentage. |

\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\* **Unchanged Section Omitted** \*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*

##### 6.6.2.4.2 Procedure

1) Measure the spectrum emission of the transmitted signal using at least the number of measurement points, and across a span, as listed in table 6.6.2.4.2-1. The selected resolution bandwidth (RBW) filter of the analyser shall be 30 kHz or less.

Table 6.6.2.4.2-1: Span and number of measurement points for OBW measurements

|  |  |  |
| --- | --- | --- |
| Bandwidth | BS channel bandwidthBWChannel (MHz) | *Aggregated BS channel bandwidth* BWChannel\_CA（MHz） |
|  | 3 | 5 | 7 | 10  | 15 | 20 | > 20 | > 20 |
| Span (MHz) | 6 | 10 | 14 | 20 | 30 | 40 | $$2×BW\_{Channel}$$ |  |
| Minimum number of measurement points | 400 | 400 | 400 | 400 | 400 | 400 | A black text on a white background  AI-generated content may be incorrect. |  |

NOTE: The detection mode of the spectrum analyzer will not have any effect on the result if the statistical properties of the out-of-OBW power are the same as those of the inside-OBW power. Both are expected to have the Rayleigh distribution of the amplitude of Gaussian noise. In any case where the statistics are not the same, though, the detection mode must be power responding. The analyser may be set to respond to the average of the power (root-mean-square of the voltage) across the measurement cell.

\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\* **Unchanged Section Omitted** \*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*

##### 6.6.3.5.2 Limits and *basic limits*

The ACLR is defined with a square filter of bandwidth equal to the transmission bandwidth configuration of the transmitted signal (BWConfig) centred on the assigned channel frequency and a filter centred on the adjacent channel frequency according to the tables below.

For operation in paired and unpaired spectrum except for band n46, n96 and n102, the ACLR shall be higher than the value specified in table 6.6.3.5.2‑1.

Table 6.6.3.5.2-1: Base station ACLR limit

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| *BS channel bandwidth* of lowest/highest NR carrier transmitted BWChannel (MHz)  | BS adjacent channel centre frequency offset below the lowest or above the highest carrier centre frequency transmitted | Assumed adjacent channel carrier (informative) | Filter on the adjacent channel frequency and corresponding filter bandwidth | ACLR limit |
| 3, 5, 7, 10, 15, 20 | BWChannel | NR of same BW (Note 2) | Square (BWConfig) | 44.2 dB37.2 dB (NOTE 4) |
|  | 2 x BWChannel | NR of same BW (Note 2) | Square (BWConfig) | 44.2 dB37.2 dB (NOTE 4) |
|  | BWChannel /2 + 2.5 MHz | 5 MHz E-UTRA | Square (4.5 MHz) | 44.2 dB (NOTE 3) |
|  | BWChannel /2 + 7.5 MHz | 5 MHz E-UTRA | Square (4.5 MHz) | 44.2 dB (NOTE 3) |
| 25, 30, 35, 40, 45, 50, 60, 70, 80, 90, 100 | BWChannel | NR of same BW (Note 2) | Square (BWConfig) | 43.8 dB36.8 dB (NOTE 4) |
|  | 2 x BWChannel | NR of same BW (Note 2) | Square (BWConfig) | 43.8 dB36.8 dB (NOTE 4) |
|  | BWChannel /2 + 2.5 MHz | 5 MHz E-UTRA | Square (4.5 MHz) | 43.8 dB (NOTE 3) |
|  | BWChannel /2 + 7.5 MHz | 5 MHz E-UTRA | Square (4.5 MHz) | 43.8 dB (NOTE 3) |
| Note 1: BWChannel and BWConfig are the *BS channel bandwidth* and transmission bandwidth configuration of the lowest/highest NR carrier transmitted on the assigned channel frequency.Note 2: With SCS that provides largest transmission bandwidth configuration (BWConfig).Note 3: The requirements are applicable when the band is also defined for E-UTRA or UTRA.Note 4: For BS operating in band n104, ACLR requirement 37.2 or 36.8 dB applies. For BS operating in other bands, ACLR requirement 44.2 or 43.8 dB applies. |

For band n46, n96 and n102, the ACLR shall be higher than the value specified in Table 6.6.3.5.2-1a.

**Table 6.6.3.5.2-1a: Base station ACLR limit for band n46, n96 and n102**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| ***BS channel bandwidth* of lowest/highest NR carrier transmitted BWChannel (MHz)**  | **BS adjacent channel centre frequency offset below the lowest or above the highest carrier centre frequency transmitted** | **Assumed adjacent channel carrier (informative)** | **Filter on the adjacent channel frequency and corresponding filter bandwidth** | **ACLR limit** |
| 10, 20, 40, 60, 80  | BWChannel | NR of same BW (Note 2) | Square (BWConfig) | 35 dB |
| 2 x BWChannel | NR of same BW (Note 2) | Square (BWConfig) | 40 dB |
| Note 1: BWChannel and BWConfig are the *BS channel bandwidth* and transmission bandwidth configuration of the lowest/highest NR carrier transmitted on the assigned channel frequency.Note 2: With SCS that provides largest transmission bandwidth configuration (BWConfig). |

The ACLR absolute *basic limit* is specified in table 6.6.3.5.2‑2.

Table 6.6.3.5.2-2: Base station ACLR absolute *basic limit*

|  |  |
| --- | --- |
| BS category / BS class | ACLR absolute *basic limit* |
| Category A Wide Area BS | -13 dBm/MHz |
| Category B Wide Area BS | -15 dBm/MHz |
| Medium Range BS | -25 dBm/MHz |
| Local Area BS | -32 dBm/MHz |

For operation in non-contiguous spectrum or multiple bands except for band n46, n96 and n102, the ACLR shall be higher than the value specified in table 6.6.3.5.2-3.

Table 6.6.3.5.2-3: Base Station ACLR limit in non-contiguous spectrum or multiple bands

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| *BS channel bandwidth* of NR carrier transmitted adjacent to s*ub-block gap* or *inter RF Bandwidth gap* BWChannel (MHz) | Sub-block or Inter RF Bandwidth gap size (Wgap) where the limit applies (MHz) | BS adjacent channel centre frequency offset below or above the sub-block or Base Station RF Bandwidth edge (inside the gap) | Assumed adjacent channel carrier | Filter on the adjacent channel frequency and corresponding filter bandwidth | ACLR limit |
| 3, 5, 7, 10, 15, 20 | Wgap ≥ 15 (Note 3)Wgap ≥ 45 (Note 4) | 2.5 MHz | 5 MHz NR(Note 2) | Square (BWConfig) | 44.2 dB37.2 dB (Note 5) |
|  | Wgap ≥ 20 (Note 3)Wgap ≥ 50 (Note 4) | 7.5 MHz | 5 MHz NR(Note 2) |  |  |
| 25, 30, 35, 40, 45, 50, 60, 70, 80, 90, 100 | Wgap ≥ 60 (Note 4)Wgap ≥ 30 (Note 3)  | 10 MHz | 20 MHz NR (Note 2) | Square (BWConfig) | 43.8 dB36.8 dB (Note 5) |
|  | Wgap ≥ 80 (Note 4)Wgap ≥ 50 (Note 3) | 30 MHz | 20 MHz NR (Note 2) |  |  |
| Note 1: BWConfig is the transmission bandwidth configuration of the assumed adjacent channel carrier.Note 2: With SCS that provides largest transmission bandwidth configuration (BWConfig).Note 3: Applicable in case the *BS channel bandwidth* of the NR carrier transmitted at the other edge of the gap is 3, 5, 7, 10, 15, 20 MHz.Note 4: Applicable in case the *BS channel bandwidth* of the NR carrier transmitted at the other edge of the gap is 25, 30, 35, 40, 45, 50, 60, 70, 80, 90, 100 MHz.Note 5: For BS operating in band n104, ACLR requirement 37.2 or 36.8 dB applies. For BS operating in other bands, ACLR requirement 44.2 or 43.8 dB applies. |

For operation in non-contiguous spectrum for band n46, n96 and n102, the ACLR shall be higher than the value specified in Table 6.6.3.2-3a.

**Table 6.6.3.5.2-3a: Base Station ACLR limit in non-contiguous spectrum for band n46, n96 and n102**

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| ***BS channel bandwidth* of NR carrier transmitted BWChannel adjacent to sub-block gap or inter RF Bandwidth gap (MHz)**  | **Sub-block or Inter RF Bandwidth gap size (Wgap) where the limit applies (MHz)** | **BS adjacent channel centre frequency offset below or above the sub-block or Base Station RF Bandwidth edge (inside the gap)** | **Assumed adjacent channel carrier** | **Filter on the adjacent channel frequency and corresponding filter bandwidth** | **ACLR limit** |
| 10, 20, 40, 60, 80 | Wgap ≥ 60 | 10 MHz | 20 MHz NR (Note 2) | Square (BWConfig) | 35 dB |
| Wgap ≥ 80 | 30 MHz | 20 MHz NR (Note 2) | Square (BWConfig) | 40 dB |
| Note 1: BWConfig is the transmission bandwidth configuration of the assumed adjacent channel carrier.Note 2: With SCS that provides largest transmission bandwidth configuration (BWConfig). |

The Cumulative Adjacent Channel Leakage power Ratio (CACLR) in a sub-block gap or the Inter RF Bandwidth gap is the ratio of:

a) the sum of the filtered mean power centred on the assigned channel frequencies for the two carriers adjacent to each side of the sub-block gap or the Inter RF Bandwidth gap, and

b) the filtered mean power centred on a frequency channel adjacent to one of the respective sub-block edges or Base Station RF Bandwidth edges.

The assumed filter for the adjacent channel frequency is defined in table 6.6.3.5.2-4 and the filters on the assigned channels are defined in table 6.6.3.5.2-6.

For operation in non-contiguous spectrum or multiple bands except for band n46, n96 and n102, the CACLR for NR carriers located on either side of the sub-block gap or the Inter RF Bandwidth gap shall be higher than the value specified in table 6.6.3.5.2-4.

Table 6.6.3.5.2-4: Base station CACLR limit

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| *BS channel bandwidth* of NR carrier transmitted adjacent to s*ub-block gap* or *inter RF Bandwidth gap* BWChannel (MHz) | Sub-block or Inter RF Bandwidth gap size (Wgap) where the limit applies (MHz) | BS adjacent channel centre frequency offset below or above the sub-block or Base Station RF Bandwidth edge (inside the gap) | Assumed adjacent channel carrier | Filter on the adjacent channel frequency and corresponding filter bandwidth | CACLR limit |
| 3, 5, 7, 10, 15, 20 | 5 ≤ Wgap < 15 (Note 3)5 ≤ Wgap < 45 (Note 4) | 2.5 MHz | 5 MHz NR(Note 2) | Square (BWConfig) | 44.2 dB37.2 dB (Note 5) |
|  | 10 < Wgap < 20 (Note 3)10 ≤ Wgap < 50 (Note 4) | 7.5 MHz | 5 MHz NR(Note 2) |  |  |
| 25, 30, 35, 40, 45, 50, 60, 70, 80, 90, 100 | 20 ≤ Wgap < 60 (Note 4)20 ≤ Wgap < 30 (Note 3) | 10 MHz | 20 MHz NR(Note 2) | Square (BWConfig) | 43.8 dB36.8 dB (Note 5) |
|  | 40 < Wgap < 80 (Note 4)40 ≤ Wgap < 50 (Note 3) | 30 MHz | 20 MHz NR(Note 2) |  |  |
| Note 1: BWConfig is the transmission bandwidth configuration of the assumed adjacent channel carrier.Note 2: With SCS that provides largest transmission bandwidth configuration (BWConfig).Note 3: Applicable in case the *BS channel bandwidth* of the NR carrier transmitted at the other edge of the gap is 3, 5, 7, 10, 15, 20 MHz.Note 4: Applicable in case the *BS channel bandwidth* of the NR carrier transmitted at the other edge of the gap is 25, 30, 35, 40, 45, 50, 60, 70, 80, 90, 100 MHz.Note 5: For BS operating in band n104, ACLR requirement 37.2 or 36.8 dB applies. For BS operating in other bands, ACLR requirement 44.2 or 43.8 dB applies. |

For operation in non-contiguous spectrum for band n46, n96 and n102, the CACLR for NR carriers located on either side of the sub-block gap shall be higher than the value specified in Table 6.6.3.5.2-4a.

**Table 6.6.3.5.2-4a: Base Station CACLR limit for band n46, n96 and n102**

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| ***BS channel bandwidth* of NR carrier transmitted BWChannel adjacent to sub-block gap or inter RF Bandwidth gap (MHz)**  | **Sub-block or Inter RF Bandwidth gap size (Wgap) where the limit applies (MHz)** | **BS adjacent channel centre frequency offset below or above the sub-block or Base Station RF Bandwidth edge (inside the gap)** | **Assumed adjacent channel carrier** | **Filter on the adjacent channel frequency and corresponding filter bandwidth** | **CACLR limit** |
| 10, 20, 40, 60, 80 | 20 ≤Wgap< 60 | 10 MHz | 20 MHz NR (Note 2) | Square (BWConfig) | 35 dB |
| 40 < Wgap< 80 | 30 MHz | 20 MHz NR (Note 2) | Square (BWConfig) | 40 dB |
| Note 1: BWConfig is the transmission bandwidth configuration of the assumed adjacent channel carrier.Note 2: With SCS that provides largest transmission bandwidth configuration (BWConfig). |

The CACLR absolute *basic limit* is specified in table 6.6.3.5.2-5.

Table 6.6.3.5.2-5: Base station CACLR absolute *basic limit*

|  |  |
| --- | --- |
| BS category / BS class | CACLR absolute *basic limit* |
| Category A Wide Area BS | -13 dBm/MHz |
| Category B Wide Area BS | -15 dBm/MHz |
| Medium Range BS | -25 dBm/MHz |
| Local Area BS | -32 dBm/MHz |

Table 6.6.3.5.2-6: Filter parameters for the assigned channel

|  |  |
| --- | --- |
| RAT of the carrier adjacent to the sub-block or Inter RF Bandwidth gap  | Filter on the assigned channel frequency and corresponding filter bandwidth |
| NR | NR of same BW with SCS that provides largest transmission bandwidth configuration |

\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\* **Unchanged Section Omitted** \*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*

### 7.2.5 Test requirements

The throughput shall be ≥ 95% of the maximum throughput of the reference measurement channel as specified in annex A.1 with parameters specified in table 7.2.5-1 for Wide Area BS, in table 7.2.5-2 for Medium Range BS and in table 7.2.5-3 for Local Area BS in any operating band except for band n46, n96, n102, and n104.

The throughput shall be ≥ 95% of the maximum throughput of the reference measurement channel as specified in annex A.2 with parameters specified in table 7.2.5-2a for Medium Range BS and in table 7.3.5-3a for Local Area BS, for band n46.

The throughput shall be ≥ 95% of the maximum throughput of the reference measurement channel as specified in annex A.2 with parameters specified in table 7.2.5-2b for Medium Range BS and in table 7.2.5-3b for Local Area BS, for band n96 and n102.

The throughput shall be ≥ 95% of the maximum throughput of the reference measurement channel as specified in annex A.1 with parameters specified in table 7.2.5-1a for Wide Area BS, in table 7.2.5-2c for Medium Range BS and in table 7.2.5-3c for Local Area BS for band n104.

The reference sensitivity level requirements for NB-IoT are specified in clause 7.2.5 of TS 36.141 [24].

Table 7.2.5-1: NR Wide Area BS reference sensitivity levels

|  |  |  |  |
| --- | --- | --- | --- |
| *BS channel* | Sub-carrier | Reference | Reference sensitivity power level, PREFSENS (dBm) |
| *bandwidth* (MHz) | spacing (kHz) | measurement channel | f ≤ 3.0 GHz | 3.0 GHz < f ≤ 4.2 GHz | 4.2 GHz < f ≤ 6.0 GHz |
| 3 | 15 | G-FR1-A1-7 (Note 1) | -102.9 | -102.6 | -102.4 |
|  |  | G-FR1-A1-21 (Note 5) | -102.9 (Note 2) | -102.6 (Note 2) | -102.4 (Note 2) |
| 5, 7, 10, 15 | 15 | G-FR1-A1-1 (Note 1) | -101 | -100.7 | -100.5 |
|  |  | G-FR1-A1-10 (Note 3) | -101 (Note 2) | -100.7 (Note 2) | -100.5 (Note 2) |
| 10, 15 | 30 | G-FR1-A1-2 (Note 1) | -101.1 | -100.8 | -100.6 |
| 10, 15 | 60 | G-FR1-A1-3 (Note 1) | -98.2 | -97.9 | -97.7 |
| 20, 25, 30, 35, 40, 45,  | 15 | G-FR1-A1-4 (Note 1) | -94.6 | -94.3 | -94.1 |
| 50 |  | G-FR1-A1-11 (Note 4) | -94.6 (Note 2) | -94.3 (Note 2) | -94.1 (Note 2) |
| 20, 25, 30, 35, 40, 45, 50, 60, 70, 80, 90, 100  | 30 | G-FR1-A1-5 (Note 1) | -94.9 | -94.6 | -94.4 |
| 20, 25, 30, 35, 40, 45, 50, 60, 70, 80, 90, 100 | 60 | G-FR1-A1-6 (Note 1) | -95 | -94.7 | -94.5 |
| NOTE 1: PREFSENS is the power level of a single instance of the reference measurement channel. This requirement shall be met for each consecutive application of a single instance of the reference measurement channel mapped to disjoint frequency ranges with a width corresponding to the number of resource blocks of the reference measurement channel each, except for one instance that might overlap one other instance to cover the full *BS channel bandwidth*.NOTE 2: The requirements apply to BS that supports NB-IoT operation in NR in-band.NOTE 3: PREFSENS is the power level of a single instance of the reference measurement channel. This requirement shall be met for a single instance of G-FR1-A1-10 mapped to the 24 NR resource blocks adjacent to the NB-IoT PRB, and for each consecutive application of a single instance of G-FR1-A1-1 mapped to disjoint frequency ranges with a width of 25 resource blocks each.NOTE 4: PREFSENS is the power level of a single instance of the reference measurement channel. This requirement shall be met for a single instance of G-FR1-A1-11 mapped to the 105 NR resource blocks adjacent to the NB-IoT PRB, and for each consecutive application of a single instance of G-FR1-A1-4 mapped to disjoint frequency ranges with a width of 106 resource blocks each.NOTE 5: PREFSENS is the power level of a single instance of the reference measurement channel. This requirement shall be met for a single instance of G-FR1-A1-21 mapped to the 12 NR resource blocks adjacent to the NB-IoT PRB, and for each consecutive application of a single instance of G-FR1-A1-7 mapped to disjoint frequency ranges with a width of 15 resource blocks each. |

Table 7.2.5-1a: NR Wide Area BS reference sensitivity levels for band n104

|  |  |  |  |
| --- | --- | --- | --- |
| *BS channel bandwidth* (MHz) | Sub-carrier spacing (kHz) | Reference measurement channel | Reference sensitivity power level, PREFSENS (dBm) (Note 6) |
| 20, 30, 40, 50  | 15 | G-FR1-A1-4 (Note 1) |  -92.8 |
| 20, 30, 40, 50, 60, 70, 80, 90, 100  | 30 | G-FR1-A1-5 (Note 1) |  -93.1 |
| 20, 30, 40, 50, 60, 70, 80, 90, 100  | 60 | G-FR1-A1-6 (Note 1) |  -93.2 |
| Note 1: PREFSENS is the power level of a single instance of the reference measurement channel. This requirement shall be met for each consecutive application of a single instance of the reference measurement channel mapped to disjoint frequency ranges with a width corresponding to the number of resource blocks of the reference measurement channel each, except for one instance that might overlap one other instance to cover the full *BS channel bandwidth*. |

Table 7.2.5-2: NR Medium Range BS reference sensitivity levels

|  |  |  |  |
| --- | --- | --- | --- |
| *BS channel* | Sub-carrier | Reference | Reference sensitivity power level, PREFSENS (dBm) |
| *bandwidth* (MHz) | spacing (kHz) | measurement channel(Note 5) | f ≤ 3.0 GHz | 3.0 GHz < f ≤ 4.2 GHz | 4.2 GHz < f ≤ 6.0 GHz |
| 3 | 15 | G-FR1-A1-7 (Note 1) | -97.9 | -97.6 | -97.4 |
|  |  | G-FR1-A1-21 (Note 6) | -97.9 (Note 2) | -97.6 (Note 2) | -97.4 (Note 2) |
| 5, 7, 10, 15 | 15 | G-FR1-A1-1 (Note 1) | -96 | -95.7 | -95.5 |
|  |  | G-FR1-A1-10 (Note 3) | -96 (Note 2) | -95.7 (Note 2) | -95.5 (Note 2) |
| 10, 15 | 30 | G-FR1-A1-2 (Note 1) | -96.1 | -95.8 | -95.6 |
| 10, 15 | 60 | G-FR1-A1-3 (Note 1) | -93.2 | -92.9 | -92.7 |
| 20, 25, 30, 35, 40, 45,  | 15 | G-FR1-A1-4 (Note 1) | -89.6 | -89.3 | -89.1 |
| 50 |  | G-FR1-A1-11 (Note 4) | -89.6 (Note 2) | -89.3 (Note 2) | -89.1 (Note 2) |
| 20, 25, 30, 35, 40, 45, 50, 60, 70, 80, 90, 100  | 30 | G-FR1-A1-5 (Note 1) | -89.9 | -89.6 | -89.4 |
| 20, 25, 30, 35, 40, 45, 50, 60, 70, 80, 90, 100  | 60 | G-FR1-A1-6 (Note 1) | -90 | -89.7 | -89.5 |
| NOTE 1: PREFSENS is the power level of a single instance of the reference measurement channel. This requirement shall be met for each consecutive application of a single instance of the reference measurement channel mapped to disjoint frequency ranges with a width corresponding to the number of resource blocks of the reference measurement channel each, except for one instance that might overlap one other instance to cover the full *BS channel bandwidth*.NOTE 2: The requirements apply to BS that supports NB-IoT operation in NR in-band.NOTE 3: PREFSENS is the power level of a single instance of the reference measurement channel. This requirement shall be met for a single instance of G-FR1-A1-10 mapped to the 24 NR resource blocks adjacent to the NB-IoT PRB, and for each consecutive application of a single instance of G-FR1-A1-1 mapped to disjoint frequency ranges with a width of 25 resource blocks each.NOTE 4: PREFSENS is the power level of a single instance of the reference measurement channel. This requirement shall be met for a single instance of G-FR1-A1-11 mapped to the 105 NR resource blocks adjacent to the NB-IoT PRB, and for each consecutive application of a single instance of G-FR1-A1-4 mapped to disjoint frequency ranges with a width of 106 resource blocks each.NOTE 5: These reference measurement channels are not applied for band n46, n96 and n102.NOTE 6: PREFSENS is the power level of a single instance of the reference measurement channel. This requirement shall be met for a single instance of G-FR1-A1-21 mapped to the 12 NR resource blocks adjacent to the NB-IoT PRB, and for each consecutive application of a single instance of G-FR1-A1-7 mapped to disjoint frequency ranges with a width of 15 resource blocks each. |

Table 7.2.5-2a: NR Medium Range BS reference sensitivity levels for band n46

|  |  |  |  |
| --- | --- | --- | --- |
| *BS channel bandwidth* (MHz) | Sub-carrier spacing (kHz) | Reference measurement channel | **Reference sensitivity power level, PREFSENS** (dBm) |
| 10 | 15 | G-FR1-A1-12 (Note 2) | -101.5 |
| 30 | G-FR1-A1-13 (Note 2) | -99.2 |
| 60 | G-FR1-A1-3 (Note 1, 3) | -92.4 |
| 20 | 15 | G-FR1-A1-14 (Note 2) | -98.6 |
| 30 | G-FR1-A1-15 (Note 2) | -95.6 |
| 60 | G-FR1-A1-6 (Note 1, 3) | -89.2 |
| 40 | 15 | G-FR1-A1-16 (Note 2) | -95.5 |
| 30 | G-FR1-A1-17 (Note 2) | -92.5 |
| 60 | G-FR1-A1-6 (Note 1, 3) | -89.2 |
| 60 | 30 | G-FR1-A1-18 (Note 2) | -90.9 |
| 60 | G-FR1-A1-6 (Note 1, 3) | -89.2 |
| 80 | 30 | G-FR1-A1-19 (Note 2) | -89.6 |
| 60 | G-FR1-A1-6 (Note 1, 3) | -89.2 |
| NOTE 1: PREFSENS is the power level of a single instance of the reference measurement channel. This requirement shall be met for each consecutive application of a single instance of the reference measurement channel mapped to disjoint frequency ranges with a width corresponding to the number of resource blocks of the reference measurement channel each, except for one instance that might overlap one other instance to cover the full *BS channel bandwidth*.NOTE 2: PREFSENS is the power level of a single instance of the reference measurement channel. This requirement shall be met for each interleaved application of a single instance of the reference measurement channel mapped to disjoint frequency ranges with a width corresponding to the number of resource blocks of the reference measurement channel each, except for one instance that might overlap one other instance to cover the full *BS channel bandwidth*.NOTE 3: For 60kHz SCS reference measurement channel is reused from Table 7.2.5-2. |

Table 7.2.5-2b: NR Medium Range BS reference sensitivity levels for band n96 and n102

|  |  |  |  |
| --- | --- | --- | --- |
| *BS channel bandwidth* (MHz) | Sub-carrier spacing (kHz) | Reference measurement channel | **Reference sensitivity power level, PREFSENS** (dBm) |
| 20 | 15 | G-FR1-A1-14 (Note 2) | -97.6 |
| 30 | G-FR1-A1-15 (Note 2) | -94.6 |
| 60 | G-FR1-A1-6 (Note 1, 3) | -88.2 |
| 40 | 15 | G-FR1-A1-16 (Note 2) | -94.5 |
| 30 | G-FR1-A1-17 (Note 2) | -91.5 |
| 60 | G-FR1-A1-6 (Note 1, 3) | -88.2 |
| 60 | 30 | G-FR1-A1-18 (Note 2) | -89.9 |
| 60 | G-FR1-A1-6 (Note 1, 3) | -88.2 |
| 80 | 30 | G-FR1-A1-19 (Note 2) | -88.6 |
| 60 | G-FR1-A1-6 (Note 1, 3) | -88.2 |
| NOTE 1: PREFSENS is the power level of a single instance of the reference measurement channel. This requirement shall be met for each consecutive application of a single instance of the reference measurement channel mapped to disjoint frequency ranges with a width corresponding to the number of resource blocks of the reference measurement channel each, except for one instance that might overlap one other instance to cover the full *BS channel bandwidth*.NOTE 2: PREFSENS is the power level of a single instance of the reference measurement channel. This requirement shall be met for each interleaved application of a single instance of the reference measurement channel mapped to disjoint frequency ranges with a width corresponding to the number of resource blocks of the reference measurement channel each, except for one instance that might overlap one other instance to cover the full *BS channel bandwidth*.NOTE 3: For 60kHz SCS reference measurement channel is reused from Table 7.2.5-2. |

Table 7.2.5-2c: NR Medium Range BS reference sensitivity levels for band n104

|  |  |  |  |
| --- | --- | --- | --- |
| *BS channel bandwidth* (MHz) | Sub-carrier spacing (kHz) | Reference measurement channel(Note 5) | Reference sensitivity power level, PREFSENS (dBm) |
| 20, 30, 40, 50  | 15 | G-FR1-A1-4 (Note 1) |  -87.8 |
| 20, 30, 40, 50, 60, 70, 80, 90, 100  | 30 | G-FR1-A1-5 (Note 1) |  -88.1 |
| 20, 30, 40, 50, 60, 70, 80, 90, 100  | 60 | G-FR1-A1-6 (Note 1) |  -88.2 |
| Note 1: PREFSENS is the power level of a single instance of the reference measurement channel. This requirement shall be met for each consecutive application of a single instance of the reference measurement channel mapped to disjoint frequency ranges with a width corresponding to the number of resource blocks of the reference measurement channel each, except for one instance that might overlap one other instance to cover the full *BS channel bandwidth*. |

Table 7.2.5-3: NR Local Area BS reference sensitivity levels

|  |  |  |  |
| --- | --- | --- | --- |
| *BS channel* | Sub-carrier | Reference | Reference sensitivity power level, PREFSENS (dBm) |
| *bandwidth* (MHz) | spacing (kHz) | measurement channel(Note 5) | f ≤ 3.0 GHz | 3.0 GHz < f ≤ 4.2 GHz | 4.2 GHz < f ≤ 6.0 GHz |
| 3 | 15 | G-FR1-A1-7 (Note 1) | -94.9 | -94.6 | -94.4 |
|  |  | G-FR1-A1-21 (Note 6) | -94.9 (Note 2) | -94.6 (Note 2) | -94.4 (Note 2) |
| 5, 7, 10, 15 | 15 | G-FR1-A1-1 (Note 1) | -93 | -92.7 | -92.5 |
|  |  | G-FR1-A1-10 (Note 3) | -93 (Note 2) | -92.7 (Note 2) | -92.5 (Note 2) |
| 10, 15 | 30 | G-FR1-A1-2 (Note 1) | -93.1 | -92.8 | -92.6 |
| 10, 15 | 60 | G-FR1-A1-3 (Note 1) | -90.2 | -89.9 | -89.7 |
| 20, 25, 30, 35, 40, 45, | 15 | G-FR1-A1-4 (Note 1) | -86.6 | -86.3 | -86.1 |
| 50 |  | G-FR1-A1-11 (Note 4) | -86.6 (Note 2) | -86.3 (Note 2) | -86.1 (Note 2) |
| 20, 25, 30, 35, 40, 45, 50, 60, 70, 80, 90, 100  | 30 | G-FR1-A1-5 (Note 1) | -86.9 | -86.6 | -86.4 |
| 20, 25, 30, 35, 40, 45, 50, 60, 70, 80, 90, 100  | 60 | G-FR1-A1-6 (Note 1) | -87 | -86.7 | -86.5 |
| Note 1: PREFSENS is the power level of a single instance of the reference measurement channel. This requirement shall be met for each consecutive application of a single instance of the reference measurement channel mapped to disjoint frequency ranges with a width corresponding to the number of resource blocks of the reference measurement channel each, except for one instance that might overlap one other instance to cover the full *BS channel bandwidth*.Note 2: The requirements apply to BS that supports NB-IoT operation in NR in-band.Note 3: PREFSENS is the power level of a single instance of the reference measurement channel. This requirement shall be met for a single instance of G-FR1-A1-10 mapped to the 24 NR resource blocks adjacent to the NB-IoT PRB, and for each consecutive application of a single instance of G-FR1-A1-1 mapped to disjoint frequency ranges with a width of 25 resource blocks each.Note 4: PREFSENS is the power level of a single instance of the reference measurement channel. This requirement shall be met for a single instance of G-FR1-A1-11 mapped to the 105 NR resource blocks adjacent to the NB-IoT PRB, and for each consecutive application of a single instance of G-FR1-A1-4 mapped to disjoint frequency ranges with a width of 106 resource blocks each.Note 5: These reference measurement channels are not applied for band n46, n96 and n102.Note 6: PREFSENS is the power level of a single instance of the reference measurement channel. This requirement shall be met for a single instance of G-FR1-A1-21 mapped to the 12 NR resource blocks adjacent to the NB-IoT PRB, and for each consecutive application of a single instance of G-FR1-A1-7 mapped to disjoint frequency ranges with a width of 15 resource blocks each. |

Table 7.2.5-3a: NR Local Area BS reference sensitivity levels for band n46

|  |  |  |  |
| --- | --- | --- | --- |
| *BS channel bandwidth* (MHz) | Sub-carrier spacing (kHz) | Reference measurement channel | **Reference sensitivity power level, PREFSENS** (dBm) |
| 10 | 15 | G-FR1-A1-12 (Note 2) | -98.5 |
|  | 30 | G-FR1-A1-13 (Note 2) | -96.2 |
|  | 60 | G-FR1-A1-3 (Note 1, 3) | -89.4 |
| 20 | 15 | G-FR1-A1-14 (Note 2) | -95.6 |
|  | 30 | G-FR1-A1-15 (Note 2) | -92.6 |
|  | 60 | G-FR1-A1-6 (Note 1, 3) | -86.2 |
| 40 | 15 | G-FR1-A1-16 (Note 2) | -92.5 |
|  | 30 | G-FR1-A1-17 (Note 2) | -89.5 |
|  | 60 | G-FR1-A1-6 (Note 1, 3) | -86.2 |
| 60 | 30 | G-FR1-A1-18 (Note 2) | -87.9 |
|  | 60 | G-FR1-A1-6 (Note 1, 3) | -86.2 |
| 80 | 30 | G-FR1-A1-19 (Note 2) | -86.6 |
|  | 60 | G-FR1-A1-6 (Note 1, 3) | -86.2 |
| NOTE 1: PREFSENS is the power level of a single instance of the reference measurement channel. This requirement shall be met for each consecutive application of a single instance of the reference measurement channel mapped to disjoint frequency ranges with a width corresponding to the number of resource blocks of the reference measurement channel each, except for one instance that might overlap one other instance to cover the full BS channel bandwidth.NOTE 2: PREFSENS is the power level of a single instance of the reference measurement channel. This requirement shall be met for each interleaved application of a single instance of the reference measurement channel mapped to disjoint frequency ranges with a width corresponding to the number of resource blocks of the reference measurement channel each, except for one instance that might overlap one other instance to cover the full *BS channel bandwidth*.NOTE 3: For 60kHz SCS reference measurement channel is reused from Table 7.2.5-3.. |

Table 7.2.5-3b: NR Local Area BS reference sensitivity levels for band n96 and n102

|  |  |  |  |
| --- | --- | --- | --- |
| *BS channel bandwidth* (MHz) | Sub-carrier spacing (kHz) | Reference measurement channel | **Reference sensitivity power level, PREFSENS** (dBm) |
| 20 | 15 | G-FR1-A1-14 (Note 2) | -94.6 |
|  | 30 | G-FR1-A1-15 (Note 2) | -91.6 |
|  | 60 | G-FR1-A1-6 (Note 1, 3) | -85.2 |
| 40 | 15 | G-FR1-A1-16 (Note 2) | -91.5 |
|  | 30 | G-FR1-A1-17 (Note 2) | -88.5 |
|  | 60 | G-FR1-A1-6 (Note 1, 3) | -85.2 |
| 60 | 30 | G-FR1-A1-18 (Note 2) | -86.9 |
|  | 60 | G-FR1-A1-6 (Note 1, 3) | -85.2 |
| 80 | 30 | G-FR1-A1-19 (Note 2) | -85.6 |
|  | 60 | G-FR1-A1-6 (Note 1, 3) | -85.2 |
| NOTE 1: PREFSENS is the power level of a single instance of the reference measurement channel. This requirement shall be met for each consecutive application of a single instance of the reference measurement channel mapped to disjoint frequency ranges with a width corresponding to the number of resource blocks of the reference measurement channel each, except for one instance that might overlap one other instance to cover the full *BS channel bandwidth*.NOTE 2: PREFSENS is the power level of a single instance of the reference measurement channel. This requirement shall be met for each interleaved application of a single instance of the reference measurement channel mapped to disjoint frequency ranges with a width corresponding to the number of resource blocks of the reference measurement channel each, except for one instance that might overlap one other instance to cover the full *BS channel bandwidth*.NOTE 3: For 60kHz SCS reference measurement channel is reused from Table 7.2.5-3. |

Table 7.2.5-3c: NR Local Area BS reference sensitivity levels for band n104

|  |  |  |  |
| --- | --- | --- | --- |
| *BS channel bandwidth* (MHz) | Sub-carrier spacing (kHz) | Reference measurement channel(Note 5) | Reference sensitivity power level, PREFSENS (dBm) |
| 20, 30, 40, 50  | 15 | G-FR1-A1-4 (Note 1) |  -84.8 |
| 20, 30, 40, 50, 60, 70, 80, 90, 100  | 30 | G-FR1-A1-5 (Note 1) |  -85.1 |
| 20, 30, 40, 50, 60, 70, 80, 90, 100  | 60 | G-FR1-A1-6 (Note 1) |  -85.2 |
| Note 1: PREFSENS is the power level of a single instance of the reference measurement channel. This requirement shall be met for each consecutive application of a single instance of the reference measurement channel mapped to disjoint frequency ranges with a width corresponding to the number of resource blocks of the reference measurement channel each, except for one instance that might overlap one other instance to cover the full *BS channel bandwidth*. |

\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\* **Unchanged Section Omitted** \*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*

### 7.3.5 Test requirements

The throughput shall be ≥ 95% of the maximum throughput of the reference measurement channel as specified in annex A.2 with parameters specified in table 7.3.2-1 for Wide Area BS, in table 7.3.2-2 for Medium Range BS and in table 7.3.2-3 for Local Area BS in any operating band except for band n46, n96, n102 and n104.

The throughput shall be ≥ 95% of the maximum throughput of the reference measurement channel as specified in annex A.2 with parameters specified in table 7.3.5-2b for Medium Range BS and in table 7.3.5-3b for Local Area BS, for band n46.

The throughput shall be ≥ 95% of the maximum throughput of the reference measurement channel as specified in annex A.2 with parameters specified in table 7.3.5-2c for Medium Range BS and in table 7.3.5-3c for Local Area BS, for band n96 and n102.

The throughput shall be ≥ 95% of the maximum throughput of the reference measurement channel as specified in annex A.2 with parameters specified in table 7.3.5-1b for Wide Area BS, in table 7.3.5-2d for Medium Range BS and in table 7.3.5-3d for Local Area BS in band n104.

For NB-IoT operation in NR in-band, the throughput shall be ≥ 95% of the maximum throughput of the reference measurement channel as specified in Annex A of TS 36.141 [24] with parameters specified in table 7.3.5-1a for Wide Area BS, in table 7.3.5-2a for Medium Range BS and in table 7.3.5-3a for Local Area BS.

Table 7.3.5-1: Wide Area BS dynamic range

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| *BS channel bandwidth* (MHz) | Subcarrier spacing (kHz) | Reference measurement channel | Wanted signal mean power (dBm) | Interfering signal mean power (dBm) / BWConfig | Type of interfering signal |
| 3 | 15 | G-FR1-A2-15 | -73.3 | -84.7 | AWGN |
| 5 | 15 | G-FR1-A2-1 | -70.4 | -82.5 | AWGN |
|  | 30 | G-FR1-A2-2 | -71.1 |  |  |
| 7 | 15 | G-FR1-A2-1 | -70.4 | -81.0 | AWGN |
| 10 | 15 | G-FR1-A2-1 | -70.4 | -79.3 | AWGN |
|  | 30 | G-FR1-A2-2 | -71.1 |  |  |
|  | 60 | G-FR1-A2-3 | -68.1 |  |  |
| 15 | 15 | G-FR1-A2-1 | -70.4 | -77.5 | AWGN |
|  | 30 | G-FR1-A2-2 | -71.1 |  |  |
|  | 60 | G-FR1-A2-3 | -68.1 |  |  |
| 20 | 15 | G-FR1-A2-4 | -64.2 | -76.2 | AWGN |
|  | 30 | G-FR1-A2-5 | -64.2 |  |  |
|  | 60 | G-FR1-A2-6 | -64.5 |  |  |
| 25 | 15 | G-FR1-A2-4 | -64.2 | -75.2 | AWGN |
|  | 30 | G-FR1-A2-5 | -64.2 |  |  |
|  | 60 | G-FR1-A2-6 | -64.5 |  |  |
| 30 | 15 | G-FR1-A2-4 | -64.2 | -74.4 | AWGN |
|  | 30 | G-FR1-A2-5 | -64.2 |  |  |
|  | 60 | G-FR1-A2-6 | -64.5 |  |  |
| 35 | 15 | G-FR1-A2-4 | -64.2 | -73.7 | AWGN |
|  | 30 | G-FR1-A2-5 | -64.2 |  |  |
|  | 60 | G-FR1-A2-6 | -64.5 |  |  |
| 40 | 15 | G-FR1-A2-4 | -64.2 | -73.1 | AWGN |
|  | 30 | G-FR1-A2-5 | -64.2 |  |  |
|  | 60 | G-FR1-A2-6 | -64.5 |  |  |
| 45 | 15 | G-FR1-A2-4 | -64.2 | -72.6 | AWGN |
|  | 30 | G-FR1-A2-5 | -64.2 |  |  |
|  | 60 | G-FR1-A2-6 | -64.5 |  |  |
| 50 | 15 | G-FR1-A2-4 | -64.2 | -72.1 | AWGN |
|  | 30 | G-FR1-A2-5 | -64.2 |  |  |
|  | 60 | G-FR1-A2-6 | -64.5 |  |  |
| 60 | 30 | G-FR1-A2-5 | -64.2 | -71.3 | AWGN |
|  | 60 | G-FR1-A2-6 | -64.5 |  |  |
| 70 | 30 | G-FR1-A2-5 | -64.2 | -70.7 | AWGN |
|  | 60 | G-FR1-A2-6 | -64.5 |  |  |
| 80 | 30 | G-FR1-A2-5 | -64.2 | -70.1 | AWGN |
|  | 60 | G-FR1-A2-6 | -64.5 |  |  |
| 90 | 30 | G-FR1-A2-5 | -64.2 | -69.5 | AWGN |
|  | 60 | G-FR1-A2-6 | -64.5 |  |  |
| 100 | 30 | G-FR1-A2-5 | -64.2 | -69.1 | AWGN |
|  | 60 | G-FR1-A2-6 | -64.5 |  |  |
| NOTE: The wanted signal mean power is the power level of a single instance of the corresponding reference measurement channel. This requirement shall be met for each consecutive application of a single instance of the reference measurement channel mapped to disjoint frequency ranges with a width corresponding to the number of resource blocks of the reference measurement channel each, except for one instance that might overlap one other instance to cover the full *BS channel bandwidth*. |

Table 7.3.5-1a: Wide Area BS dynamic range for NB-IoT operation in NR in-band

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| *BS channel bandwidth* (MHz) | Reference measurement channel | Wanted signal mean power (dBm) | Interfering signal mean power (dBm) / BWConfig | Type of interfering signal |
| 3 |  |  | -84.7 |  |
| 5 |  |  | -82.5 |  |
| 7 |  |  | -81.0 |  |
| 10 |  |  | -79.3 |  |
| 15 |  |  | -77.5 |  |
| 20 | FRC A15-1 in |  | -76.2 |  |
| 25 | Annex A.15 in | -99.4 | -75.2 | AWGN |
| 30 | TS 36.141 [24] |  | -74.4 |  |
| 35 |  |  | -73.7 |  |
| 40 |  |  | -73.1 |  |
| 45 |  |  | -72.6 |  |
| 50 |  |  | -72.1 |  |
| 3 |  |  | -84.7 |  |
| 5 |  |  | -82.5 |  |
| 7 |  |  | -81.0 |  |
| 10 |  |  | -79.3 |  |
| 15 | FRC A15-2 in |  | -77.5 |  |
| 20 | Annex A.15 in | -105.3 | -76.2 | AWGN |
| 25 | TS 36.141 [24] |  | -75.2 |  |
| 30 |  |  | -74.4 |  |
| 35 |  |  | -73.7 |  |
| 40 |  |  | -73.1 |  |
| 45 |  |  | -72.6 |  |
| 50 |  |  | -72.1 |  |

Table 7.3.5-1b: Wide Area BS dynamic range for n104

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| *BS channel bandwidth* (MHz) | Subcarrier spacing (kHz) | Reference measurement channel | Wanted signal mean power (dBm)  | Interfering signal mean power (dBm) / BWConfig  | Type of interfering signal |
| 20 | 15 | G-FR1-A2-4 | -63.2 | -75.2 | AWGN |
|  | 30 | G-FR1-A2-5 | -63.2 |  |  |
|  | 60 | G-FR1-A2-6 | -63.5 |  |  |
| 30 | 15 | G-FR1-A2-4 | -63.2 | -73.4 | AWGN |
|  | 30 | G-FR1-A2-5 | -63.2 |  |  |
|  | 60 | G-FR1-A2-6 | -63.5 |  |  |
| 40 | 15 | G-FR1-A2-4 | -63.2 | -72.1 | AWGN |
|  | 30 | G-FR1-A2-5 | -63.2 |  |  |
|  | 60 | G-FR1-A2-6 | -63.5 |  |  |
| 50 | 15 | G-FR1-A2-4 | -63.2 | -71.1 | AWGN |
|  | 30 | G-FR1-A2-5 | -63.2 |  |  |
|  | 60 | G-FR1-A2-6 | -63.5 |  |  |
| 60 | 30 | G-FR1-A2-5 | -63.2 | -70.3 | AWGN |
|  | 60 | G-FR1-A2-6 | -63.5 |  |  |
| 70 | 30 | G-FR1-A2-5 | -63.2 | -69.7 | AWGN |
|  | 60 | G-FR1-A2-6 | -63.5 |  |  |
| 80 | 30 | G-FR1-A2-5 | -63.2 | -69.1 | AWGN |
|  | 60 | G-FR1-A2-6 | -63.5 |  |  |
| 90 | 30 | G-FR1-A2-5 | -63.2 | -68.5 | AWGN |
|  | 60 | G-FR1-A2-6 | -63.5 |  |  |
| 100 | 30 | G-FR1-A2-5 | -63.2 | -68.1 | AWGN |
|  | 60 | G-FR1-A2-6 | -63.5 |  |  |
| NOTE 1: The wanted signal mean power is the power level of a single instance of the corresponding reference measurement channel. This requirement shall be met for each consecutive application of a single instance of the reference measurement channel mapped to disjoint frequency ranges with a width corresponding to the number of resource blocks of the reference measurement channel each, except for one instance that might overlap one other instance to cover the full *BS channel bandwidth*. |

Table 7.3.5-2: Medium Range BS dynamic range

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| *BS channel bandwidth* (MHz) | Subcarrier spacing (kHz) | Reference measurement channel(Note 2) | Wanted signal mean power (dBm) | Interfering signal mean power (dBm) / BWConfig | Type of interfering signal |
| 3 | 15 | G-FR1-A2-15 | -68.3 | -79.7 | AWGN |
| 5 | 15 | G-FR1-A2-1 | -65.4 | -77.5 | AWGN |
|  | 30 | G-FR1-A2-2 | -66.1 |  |  |
| 7 | 15 | G-FR1-A2-1 | -65.4 | -76.0 | AWGN |
| 10 | 15 | G-FR1-A2-1 | -65.4 | -74.3 | AWGN |
|  | 30 | G-FR1-A2-2 | -66.1 |  |  |
|  | 60 | G-FR1-A2-3 | -63.1 |  |  |
| 15 | 15 | G-FR1-A2-1 | -65.4 | -72.5 | AWGN |
|  | 30 | G-FR1-A2-2 | -66.1 |  |  |
|  | 60 | G-FR1-A2-3 | -63.1 |  |  |
| 20 | 15 | G-FR1-A2-4 | -59.2 | -71.2 | AWGN |
|  | 30 | G-FR1-A2-5 | -59.2 |  |  |
|  | 60 | G-FR1-A2-6 | -59.5 |  |  |
| 25 | 15 | G-FR1-A2-4 | -59.2 | -70.2 | AWGN |
|  | 30 | G-FR1-A2-5 | -59.2 |  |  |
|  | 60 | G-FR1-A2-6 | -59.5 |  |  |
| 30 | 15 | G-FR1-A2-4 | -59.2 | -69.4 | AWGN |
|  | 30 | G-FR1-A2-5 | -59.2 |  |  |
|  | 60 | G-FR1-A2-6 | -59.5 |  |  |
| 35 | 15 | G-FR1-A2-4 | -59.2 | -68.7 | AWGN |
|  | 30 | G-FR1-A2-5 | -59.2 |  |  |
|  | 60 | G-FR1-A2-6 | -59.5 |  |  |
| 40 | 15 | G-FR1-A2-4 | -59.2 | -68.1 | AWGN |
|  | 30 | G-FR1-A2-5 | -59.2 |  |  |
|  | 60 | G-FR1-A2-6 | -59.5 |  |  |
| 45 | 15 | G-FR1-A2-4 | -59.2 | -67.6 | AWGN |
|  | 30 | G-FR1-A2-5 | -59.2 |  |  |
|  | 60 | G-FR1-A2-6 | -59.5 |  |  |
| 50 | 15 | G-FR1-A2-4 | -59.2 | -67.1 | AWGN |
|  | 30 | G-FR1-A2-5 | 59.8 |  |  |
|  | 60 | G-FR1-A2-6 | -59.5 |  |  |
| 60 | 30 | G-FR1-A2-5 | -59.2 | -66.3 | AWGN |
|  | 60 | G-FR1-A2-6 | -59.5 |  |  |
| 70 | 30 | G-FR1-A2-5 | -59.2 | -65.7 | AWGN |
|  | 60 | G-FR1-A2-6 | -59.5 |  |  |
| 80 | 30 | G-FR1-A2-5 | -59.2 | -65.1 | AWGN |
|  | 60 | G-FR1-A2-6 | -59.5 |  |  |
| 90 | 30 | G-FR1-A2-5 | -59.2 | -64.5 | AWGN |
|  | 60 | G-FR1-A2-6 | -59.5 |  |  |
| 100 | 30 | G-FR1-A2-5 | -59.2 | -64.1 | AWGN |
|  | 60 | G-FR1-A2-6 | -59.5 |  |  |
| NOTE 1: The wanted signal mean power is the power level of a single instance of the corresponding reference measurement channel. This requirement shall be met for each consecutive application of a single instance of the reference measurement channel mapped to disjoint frequency ranges with a width corresponding to the number of resource blocks of the reference measurement channel each, except for one instance that might overlap one other instance to cover the full *BS channel bandwidth*.NOTE 2: These reference measurement channels are not applied for band n46, n96 and n102. |

Table 7.3.5-2a: Medium Range BS dynamic range for NB-IoT operation in NR in-band

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| *BS channel bandwidth* (MHz) | Reference measurement channel | Wanted signal mean power (dBm) | Interfering signal mean power (dBm) / BWConfig | Type of interfering signal |
| **3** |  |  | -79.7 |  |
| 5 |  |  | -77.5 |  |
| 7 |  |  | -76.0 |  |
| 10 |  |  | -74.3 |  |
| 15 |  |  | -72.5 |  |
| 20 | FRC A15-1 in |  | -71.2 |  |
| 25 | Annex A.15 in | -94.4 | -70.2 | AWGN |
| 30 | TS 36.141 [24] |  | -69.4 |  |
| 35 |  |  | -68.7 |  |
| 40 |  |  | -68.1 |  |
| 45 |  |  | -67.6 |  |
| 50 |  |  | -67.1 |  |
| **3** |  |  | -79.7 |  |
| 5 |  |  | -77.5 |  |
| 7 |  |  | -76.0 |  |
| 10 |  |  | -74.3 |  |
| 15 | FRC A15-2 in |  | -72.5 |  |
| 20 | Annex A.15 in | -100.3 | -71.2 | AWGN |
| 25 | TS 36.141 [24] |  | -70.2 |  |
| 30 |  |  | -69.4 |  |
| 35 |  |  | -68.7 |  |
| 40 |  |  | -68.1 |  |
| 45 |  |  | -67.6 |  |
| 50 |  |  | -67.1 |  |

Table 7.3.5-2b: Medium Range BS dynamic range for band n46

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| *BS channel bandwidth* (MHz) | Subcarrier spacing (kHz) | Reference measurement channel | Wanted signal mean power (dBm) | Interfering signal mean power (dBm) / BWConfig | Type of interfering signal |
| 10 | 15 | G-FR1-A2-7(Note 2) | -72.5 | -74.3  | AWGN |
|  | 30 | G-FR1-A2-8(Note 2) | -70.3 |  |  |
|  | 60 | G-FR1-A2-3(Note 1, 3) | -63.1 |  |  |
| 20 | 15 | G-FR1-A2-9(Note 2) | -69.5 | -71.2  | AWGN |
|  | 30 | G-FR1-A2-10(Note 2) | -66.5 |  |  |
|  | 60 | G-FR1-A2-6(Note 1, 3) | -59.5 |  |  |
| 40 | 15 | G-FR1-A2-11(Note 2) | -66.4 | -68.1  | AWGN |
|  | 30 | G-FR1-A2-12(Note 2) | -63.4 |  |  |
|  | 60 | G-FR1-A2-6(Note 1, 3) | -59.5 |  |  |
| 60 | 30 | G-FR1-A2-13(Note 2) | -61.6 | -66.3  | AWGN |
|  | 60 | G-FR1-A2-6(Note 1, 3) | -59.5 |  |  |
| 80 | 30 | G-FR1-A2-14(Note 2) | -60.4 | -65.1  | AWGN |
|  | 60 | G-FR1-A2-6(Note 1, 3) | -59.5 |  |  |
| NOTE 1: The wanted signal mean power is the power level of a single instance of the corresponding reference measurement channel. This requirement shall be met for each consecutive application of a single instance of the reference measurement channel mapped to disjoint frequency ranges with a width corresponding to the number of resource blocks of the reference measurement channel each, except for one instance that might overlap one other instance to cover the full *BS channel bandwidth*.NOTE 2: The wanted signal mean power is the power level of a single instance of the corresponding reference measurement channel. This requirement shall be met for each interleaved application of a single instance of the reference measurement channel mapped to disjoint frequency ranges with a width corresponding to the number of resource blocks of the reference measurement channel each, except for one instance that might overlap one other instance to cover the full *BS channel bandwidth*.NOTE 3: For 60kHz SCS reference measurement channel is reused from Table 7.3.5-2. |

**Table 7.3.5-2c: Medium Range BS dynamic range for band n96 and n102**

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| ***BS channel bandwidth* (MHz)** | **Subcarrier spacing (kHz)** | **Reference measurement channel** | **Wanted signal mean power (dBm)** | **Interfering signal mean power (dBm) / BWConfig** | **Type of interfering signal** |
| 20 | 15 | G-FR1-A2-9(Note 2) | -68.5 | -70.2  | AWGN |
|  | 30 | G-FR1-A2-10(Note 2) | -65.5 |  |  |
|  | 60 | G-FR1-A2-6(Note 1, 3) | -58.5 |  |  |
| 40 | 15 | G-FR1-A2-11(Note 2) | -65.4 | -67.1  | AWGN |
|  | 30 | G-FR1-A2-12(Note 2) | -62.4 |  |  |
|  | 60 | G-FR1-A2-6(Note 1, 3) | -58.5 |  |  |
| 60 | 30 | G-FR1-A2-13(Note 2) | -60.6 | -65.3  | AWGN |
|  | 60 | G-FR1-A2-6(Note 1, 3) | -58.5 |  |  |
| 80 | 30 | G-FR1-A2-14(Note 2) | -59.4 | -64.1  | AWGN |
|  | 60 | G-FR1-A2-6(Note 1, 3) | -58.5 |  |  |
| NOTE 1: The wanted signal mean power is the power level of a single instance of the corresponding reference measurement channel. This requirement shall be met for each consecutive application of a single instance of the reference measurement channel mapped to disjoint frequency ranges with a width corresponding to the number of resource blocks of the reference measurement channel each, except for one instance that might overlap one other instance to cover the full *BS channel bandwidth*.NOTE 2: The wanted signal mean power is the power level of a single instance of the corresponding reference measurement channel. This requirement shall be met for each interleaved application of a single instance of the reference measurement channel mapped to disjoint frequency ranges with a width corresponding to the number of resource blocks of the reference measurement channel each, except for one instance that might overlap one other instance to cover the full *BS channel bandwidth*.NOTE 3: For 60kHz SCS reference measurement channel is reused from Table 7.3.5-2. |

Table 7.3.5-2d: Medium Range BS dynamic range for n104

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| *BS channel bandwidth* (MHz) | Subcarrier spacing (kHz) | Reference measurement channel(Note 2) | Wanted signal mean power (dBm)  | Interfering signal mean power (dBm) / BWConfig  | Type of interfering signal |
| 20 | 15 | G-FR1-A2-4 | -58.2 | -70.2 | AWGN |
|  | 30 | G-FR1-A2-5 | -58.2 |  |  |
|  | 60 | G-FR1-A2-6 | -58.5 |  |  |
| 30 | 15 | G-FR1-A2-4 | -58.2 | -68.4 | AWGN |
|  | 30 | G-FR1-A2-5 | -58.2 |  |  |
|  | 60 | G-FR1-A2-6 | -58.5 |  |  |
| 40 | 15 | G-FR1-A2-4 | -58.2 | -67.1 | AWGN |
|  | 30 | G-FR1-A2-5 | -58.2 |  |  |
|  | 60 | G-FR1-A2-6 | -58.5 |  |  |
| 50 | 15 | G-FR1-A2-4 | -58.2 | -66.1 | AWGN |
|  | 30 | G-FR1-A2-5 | -58.2 |  |  |
|  | 60 | G-FR1-A2-6 | -58.5 |  |  |
| 60 | 30 | G-FR1-A2-5 | -58.2 | -65.3 | AWGN |
|  | 60 | G-FR1-A2-6 | -58.5 |  |  |
| 70 | 30 | G-FR1-A2-5 | -58.2 | -64.7 | AWGN |
|  | 60 | G-FR1-A2-6 | -58.5 |  |  |
| 80 | 30 | G-FR1-A2-5 | -58.2 | -64.1 | AWGN |
|  | 60 | G-FR1-A2-6 | -58.5 |  |  |
| 90 | 30 | G-FR1-A2-5 | -58.2 | -63.5 | AWGN |
|  | 60 | G-FR1-A2-6 | -58.5 |  |  |
| 100 | 30 | G-FR1-A2-5 | -58.2 | -63.1 | AWGN |
|  | 60 | G-FR1-A2-6 | -58.5 |  |  |
| NOTE 1: The wanted signal mean power is the power level of a single instance of the corresponding reference measurement channel. This requirement shall be met for each consecutive application of a single instance of the reference measurement channel mapped to disjoint frequency ranges with a width corresponding to the number of resource blocks of the reference measurement channel each, except for one instance that might overlap one other instance to cover the full *BS channel bandwidth*. |

Table 7.3.5-3: Local Area BS dynamic range

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| *BS channel bandwidth* (MHz) | Subcarrier spacing (kHz) | Reference measurement channel(Note 2) | Wanted signal mean power (dBm) | Interfering signal mean power (dBm) / BWConfig | Type of interfering signal |
| 3 | 15 | G-FR1-A2-15 | -65.3 | -76.7 | AWGN |
| 5 | 15 | G-FR1-A2-1 | -62.4 | -74.5 | AWGN |
|  | 30 | G-FR1-A2-2 | -63.1 |  |  |
| 7 | 15 | G-FR1-A2-1 | -62.4 | -73.0 | AWGN |
| 10 | 15 | G-FR1-A2-1 | -62.4 | -71.3 | AWGN |
|  | 30 | G-FR1-A2-2 | -63.1 |  |  |
|  | 60 | G-FR1-A2-3 | -60.1 |  |  |
| 15 | 15 | G-FR1-A2-1 | -62.4 | -69.5 | AWGN |
|  | 30 | G-FR1-A2-2 | -63.1 |  |  |
|  | 60 | G-FR1-A2-3 | -60.1 |  |  |
| 20 | 15 | G-FR1-A2-4 | -56.2 | -68.2 | AWGN |
|  | 30 | G-FR1-A2-5 | -56.2 |  |  |
|  | 60 | G-FR1-A2-6 | -56.5 |  |  |
| 25 | 15 | G-FR1-A2-4 | -56.2 | -67.2 | AWGN |
|  | 30 | G-FR1-A2-5 | -56.2 |  |  |
|  | 60 | G-FR1-A2-6 | -56.5 |  |  |
| 30 | 15 | G-FR1-A2-4 | -56.2 | -66.4 | AWGN |
|  | 30 | G-FR1-A2-5 | -56.2 |  |  |
|  | 60 | G-FR1-A2-6 | -56.5 |  |  |
| 35 | 15 | G-FR1-A2-4 | -56.2 | -65.7 | AWGN |
|  | 30 | G-FR1-A2-5 | -56.2 |  |  |
|  | 60 | G-FR1-A2-6 | -56.5 |  |  |
| 40 | 15 | G-FR1-A2-4 | -56.2 | -65.1 | AWGN |
|  | 30 | G-FR1-A2-5 | -56.2 |  |  |
|  | 60 | G-FR1-A2-6 | -56.5 |  |  |
| 45 | 15 | G-FR1-A2-4 | -56.2 | -64.6 | AWGN |
|  | 30 | G-FR1-A2-5 | -56.2 |  |  |
|  | 60 | G-FR1-A2-6 | -56.5 |  |  |
| 50 | 15 | G-FR1-A2-4 | -56.2 | -64.1 | AWGN |
|  | 30 | G-FR1-A2-5 | -56.2 |  |  |
|  | 60 | G-FR1-A2-6 | -56.5 |  |  |
| 60 | 30 | G-FR1-A2-5 | -56.2 | -63.3 | AWGN |
|  | 60 | G-FR1-A2-6 | -56.5 |  |  |
| 70 | 30 | G-FR1-A2-5 | -56.2 | -62.7 | AWGN |
|  | 60 | G-FR1-A2-6 | -56.5 |  |  |
| 80 | 30 | G-FR1-A2-5 | -56.2 | -62.1 | AWGN |
|  | 60 | G-FR1-A2-6 | -56.5 |  |  |
| 90 | 30 | G-FR1-A2-5 | -56.2 | -61.5 | AWGN |
|  | 60 | G-FR1-A2-6 | -56.5 |  |  |
| 100 | 30 | G-FR1-A2-5 | -56.2 | -61.1 | AWGN |
|  | 60 | G-FR1-A2-6 | -56.5 |  |  |
| NOTE 1: The wanted signal mean power is the power level of a single instance of the corresponding reference measurement channel. This requirement shall be met for each consecutive application of a single instance of the reference measurement channel mapped to disjoint frequency ranges with a width corresponding to the number of resource blocks of the reference measurement channel each, except for one instance that might overlap one other instance to cover the full *BS channel bandwidth*.NOTE 2: These reference measurement channels are not applied for band n46, n96 and n102. |

Table 7.3.5-3a: Local Area BS dynamic range for NB-IoT operation in NR in-band

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| *BS channel bandwidth* (MHz) | Reference measurement channel | Wanted signal mean power (dBm) | Interfering signal mean power (dBm) / BWConfig | Type of interfering signal |
| 3 |  |  | -76.7 |  |
| 5 |  |  | -74.5 |  |
| 7 |  |  | -73.0 |  |
| 10 |  |  | -71.3 |  |
| 15 | FRC A15-1 in |  | -69.5 |  |
| 20 | Annex A.15 in | -91.4 | -68.2 | AWGN |
| 25 | TS 36.141 [24] |  | -67.2 |  |
| 30 |  |  | -66.4 |  |
| 35 |  |  | -65.7 |  |
| 40 |  |  | -65.1 |  |
| 45 |  |  | -64.6 |  |
| 50 |  |  | -64.1 |  |
| 3 |  |  | -76.7 |  |
| 5 |  |  | -74.5 |  |
| 7 |  |  | -73.0 |  |
| 10 |  |  | -71.3 |  |
| 15 | FRC A15-2 in |  | -69.5 |  |
| 20 | Annex A.15 in | -97.3 | -68.2 | AWGN |
| 25 | TS 36.141 [24] |  | -67.2 |  |
| 30 |  |  | -66.4 |  |
| 35 |  |  | -65.7 |  |
| 40 |  |  | -65.1 |  |
| 45 |  |  | -64.6 |  |
| 50 |  |  | -64.1 |  |

Table 7.3.5-3b: Local Area BS dynamic range for band n46

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| *BS channel bandwidth* (MHz) | Subcarrier spacing (kHz) | Reference measurement channel | Wanted signal mean power (dBm) | Interfering signal mean power (dBm) / BWConfig | Type of interfering signal |
| 10 | 15 | G-FR1-A2-7(Note 2) | -69.5 | -71.3  | AWGN |
|  | 30 | G-FR1-A2-8(Note 2) | -67.3 |  |  |
|  | 60 | G-FR1-A2-3(Note 1, 3)  | -60.1 |  |  |
| 20 | 15 | G-FR1-A2-9(Note 2) | -66.5 | -68.2  | AWGN |
|  | 30 | G-FR1-A2-10 | -63.5 |  |  |
|  | 60 | G-FR1-A2-6(Note 1, 3) | -56.5 |  |  |
| 40 | 15 | G-FR1-A2-11(Note 2) | -63.4 | -65.1  | AWGN |
|  | 30 | G-FR1-A2-12(Note 2) | -60.4 |  |  |
|  | 60 | G-FR1-A2-6(Note 1, 3) | -56.5 |  |  |
| 60 | 30 | G-FR1-A2-13(Note 2) | -58.6 | -63.3  | AWGN |
|  | 60 | G-FR1-A2-6(Note 1, 3) | -56.5 |  |  |
| 80 | 30 | G-FR1-A2-14(Note 2) | -57.4 | -62.1  | AWGN |
|  | 60 | G-FR1-A2-6(Note 1, 3) | -56.5 |  |  |
| NOTE 1: The wanted signal mean power is the power level of a single instance of the corresponding reference measurement channel. This requirement shall be met for each consecutive application of a single instance of the reference measurement channel mapped to disjoint frequency ranges with a width corresponding to the number of resource blocks of the reference measurement channel each, except for one instance that might overlap one other instance to cover the full *BS channel bandwidth*.NOTE 2: The wanted signal mean power is the power level of a single instance of the corresponding reference measurement channel. This requirement shall be met for each interleaved application of a single instance of the reference measurement channel mapped to disjoint frequency ranges with a width corresponding to the number of resource blocks of the reference measurement channel each, except for one instance that might overlap one other instance to cover the full *BS channel bandwidth*.NOTE 3: For 60kHz SCS reference measurement channel is reused from Table 7.3.5-2. |

Table 7.3.5-3c: Local area BS dynamic range for band n96 and n102

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| *BS channel bandwidth* (MHz) | Subcarrier spacing (kHz) | Reference measurement channel | Wanted signal mean power (dBm) | Interfering signal mean power (dBm) / BWConfig | Type of interfering signal |
| 20 | 15 | G-FR1-A2-9(Note 2) | -65.5 | -67.2  | AWGN |
|  | 30 | G-FR1-A2-10(Note 2) | -62.5 |  |  |
|  | 60 | G-FR1-A2-6(Note 1, 3) | -55.5 |  |  |
| 40 | 15 | G-FR1-A2-11(Note 2) | -62.4 | -64.1  | AWGN |
|  | 30 | G-FR1-A2-12(Note 2) | -59.4 |  |  |
|  | 60 | G-FR1-A2-6(Note 1, 3) | -55.5 |  |  |
| 60 | 30 | G-FR1-A2-13(Note 2) | -57.6 | -62.3  | AWGN |
|  | 60 | G-FR1-A2-6(Note 1, 3) | -55.5 |  |  |
| 80 | 30 | G-FR1-A2-14(Note 2) | -56.4 | -61.1  | AWGN |
|  | 60 | G-FR1-A2-6(Note 1, 3) | -55.5 |  |  |
| NOTE 1: The wanted signal mean power is the power level of a single instance of the corresponding reference measurement channel. This requirement shall be met for each consecutive application of a single instance of the reference measurement channel mapped to disjoint frequency ranges with a width corresponding to the number of resource blocks of the reference measurement channel each, except for one instance that might overlap one other instance to cover the full *BS channel bandwidth*.NOTE 2: The wanted signal mean power is the power level of a single instance of the corresponding reference measurement channel. This requirement shall be met for each interleaved application of a single instance of the reference measurement channel mapped to disjoint frequency ranges with a width corresponding to the number of resource blocks of the reference measurement channel each, except for one instance that might overlap one other instance to cover the full *BS channel bandwidth*.NOTE 3: For 60kHz SCS reference measurement channel is reused from Table 7.3.5-2. |

Table 7.3.5-3d: Local Area BS dynamic range for n104

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| *BS channel bandwidth* (MHz) | Subcarrier spacing (kHz) | Reference measurement channel | Wanted signal mean power (dBm) | Interfering signal mean power (dBm) / BWConfig | Type of interfering signal |
| 20 | 15 | G-FR1-A2-4 | -55.2 | -67.2 | AWGN |
|  | 30 | G-FR1-A2-5 | -55.2 |  |  |
|  | 60 | G-FR1-A2-6 | -55.5 |  |  |
| 30 | 15 | G-FR1-A2-4 | -55.2 | -65.4 | AWGN |
|  | 30 | G-FR1-A2-5 | -55.2 |  |  |
|  | 60 | G-FR1-A2-6 | -55.5 |  |  |
| 40 | 15 | G-FR1-A2-4 | -55.2 | -64.1 | AWGN |
|  | 30 | G-FR1-A2-5 | -55.2 |  |  |
|  | 60 | G-FR1-A2-6 | -55.5 |  |  |
| 50 | 15 | G-FR1-A2-4 | -55.2 | -63.1 | AWGN |
|  | 30 | G-FR1-A2-5 | -55.2 |  |  |
|  | 60 | G-FR1-A2-6 | -55.5 |  |  |
| 60 | 30 | G-FR1-A2-5 | -55.2 | -62.3 | AWGN |
|  | 60 | G-FR1-A2-6 | -55.5 |  |  |
| 70 | 30 | G-FR1-A2-5 | -55.2 | -61.7 | AWGN |
|  | 60 | G-FR1-A2-6 | -55.5 |  |  |
| 80 | 30 | G-FR1-A2-5 | -55.2 | -61.1 | AWGN |
|  | 60 | G-FR1-A2-6 | -55.5 |  |  |
| 90 | 30 | G-FR1-A2-5 | -55.2 | -60.5 | AWGN |
|  | 60 | G-FR1-A2-6 | -55.5 |  |  |
| 100 | 30 | G-FR1-A2-5 | -55.2 | -60.1 | AWGN |
|  | 60 | G-FR1-A2-6 | -55.5 |  |  |
| NOTE 1: The wanted signal mean power is the power level of a single instance of the corresponding reference measurement channel. This requirement shall be met for each consecutive application of a single instance of the reference measurement channel mapped to disjoint frequency ranges with a width corresponding to the number of resource blocks of the reference measurement channel each, except for one instance that might overlap one other instance to cover the full *BS channel bandwidth*. |

\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\* **Unchanged Section Omitted** \*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*

#### 7.4.1.5 Test requirements

The throughput shall be ≥ 95% of the maximum throughput of the reference measurement channel.

For BS operating except for band n46, n96, n102 and n104, the wanted and the interfering signal coupled to the *BS* *type 1-C* *antenna connector* or *BS type 1-H* *TAB connector* are specified in table 7.4.1.5-1 and the frequency offset between the wanted and interfering signal in table 7.4.1.5-2 for ACS. The reference measurement channel for the wanted signal is identified in table 7.2.5-1, 7.2.5-2 and 7.2.5-3 for each channel bandwidth in any operating band except for band n46, n96, n102 and n104 and further specified in annex A.1. The characteristics of the interfering signal is further specified in annex E.

For BS operating in band n46, n96 and n102, the wanted and the interfering signal coupled to the BS type 1-C antenna connector or BS type 1-H TAB connector are specified in table 7.4.1.5-1a,7.4.1.5-1b and the frequency offset between the wanted and interfering signal in table 7.4.1.5-2a for ACS. The reference measurement channel for the wanted signal is identified in table 7.2.5-2a,7.2.5-3a and 7.2.5-3b for each BS channel bandwidth and further specified in annex A.1a. The characteristics of the interfering signal is further specified in annex D.

For BS operating in band n104, the wanted and the interfering signal coupled to the BS type 1-C antenna connector or BS type 1-H TAB connector are specified in table 7.4.1.5-1b and the frequency offset between the wanted and interfering signal in table 7.4.1.5-2 for ACS. The reference measurement channel for the wanted signal is identified in table 7.2.5-1a, 7.2.5-2c, and 7.2.5-3c for each *BS channel bandwidth* and further specified in annex A.1. The characteristics of the interfering signal is further specified in annex D.

For BS supporting NB-IoT operation in NR in-band, the wanted and the interfering signal coupled to the *BS* *type 1-C* *antenna connector* are specified in table 7.4.1.5-1 and the frequency offset between the wanted and interfering signal in table 7.4.1.5-2 for ACS. The reference measurement channel for the NB-IoT wanted signal is identified in clause 7.2.5 of TS 36.141 [24]. The characteristics of the interfering signal is further specified in annex E.

The ACS requirement is applicable outside the Base Station RF Bandwidth or Radio Bandwidth. The interfering signal offset is defined relative to the Base station RF Bandwidth edges or Radio Bandwidth edges.

For a BS operating in non-contiguous spectrum within any *operating band*, the ACS requirement shall apply in addition inside any sub-block gap, in case the sub-block gap size is at least as wide as the NR interfering signal in table 7.4.1.5-2. The interfering signal offset is defined relative to the sub-block edges inside the sub-block gap.

For a *multi-band connector*, the ACS requirement shall apply in addition inside any Inter RF Bandwidth gap, in case the Inter RF Bandwidth gap size is at least as wide as the NR interfering signal in table 7.4.1.5‑2. The interfering signal offset is defined relative to the Base Station RF Bandwidth edges inside the Inter RF Bandwidth gap

Conducted requirement is defined at the *antenna connector* for *BS type 1-C* and at the *TAB connector* for *BS type 1-H.*

Table 7.4.1.5-1: Base station ACS requirement

|  |  |  |
| --- | --- | --- |
| *BS channel bandwidth* of the lowest/highest carrier received (MHz) | Wanted signal mean power (dBm) | Interfering signal mean power (dBm) |
| 3 | PREFSENS + 8 dB | Wide Area BS: -52Medium Range BS: -47Local Area BS: -44 |
| 5, 7, 10, 15, 20, 25, 30, 35, 40, 45, 50, 60, 70, 80, 90, 100 | PREFSENS + 6 dB |  |
| NOTE 1: The SCS for the lowest/highest carrier received is the lowest SCS supported by the BS for that bandwidth.NOTE 2: PREFSENS depends on the RAT. For NR, PREFSENS depends also on the *BS channel bandwidth* as specified in TS 38.104 [2], table 7.2.2-1, 7.2.2-2 and 7.2.2-3. For NB-IoT, PREFSENS depends also on the *sub-carrier spacing* as specified in tables 7.2.1-5, 7.2.1-5a and 7.2.1-5c of TS 36.104 [22]. |

Table 7.4.1.5-1a: Base station ACS requirement for band n46, n96 and n102

|  |  |  |
| --- | --- | --- |
| *BS channel bandwidth* of the lowest/*highest carrier* received (MHz) | Wanted signal mean power (dBm) | Interfering signal mean power (dBm) |
| 10, 20, 40, 60, 80 (Note 1) | PREFSENS + 6 dB | Medium Range BS: -47 Local Area BS: -44 |
| NOTE 1: The SCS for the lowest/highest carrier received is the lowest SCS supported by the BS for that bandwidth.NOTE 2: PREFSENS depends on the RAT. For NR, PREFSENS depends also on the *BS channel bandwidth* as specified in tables 7.2.2-2a, 7.2.2-2b, 7.2.2-3a, 7.2.2-3b of TS 38.104[2]. |

Table 7.4.1.5-1b: Base station ACS requirement for band n104

|  |  |  |
| --- | --- | --- |
| *BS channel bandwidth* of the lowest/*highest carrier* received (MHz) | Wanted signal mean power (dBm) | Interfering signal mean power (dBm) |
| 20, 30, 40, 50, 60, 70, 80, 90, 100 (Note 1) | PREFSENS + 6 dB | Wide Area BS: -55Medium Range BS: -50Local Area BS: -47 |
| NOTE 1: The SCS for the lowest/highest carrier received is the lowest SCS supported by the BS for that bandwidth.NOTE 2: PREFSENS depends on the RAT. For NR, PREFSENS depends also on the *BS channel bandwidth* as specified in tables 7.2.2-1a, 7.2.2-2c, 7.2.2-3c of TS 38.104[2]. |

Table 7.4.1.5-2: Base Station ACS interferer frequency offset values

|  |  |  |
| --- | --- | --- |
| *BS channel bandwidth* of the lowest/highest carrier received (MHz) | Interfering signal centre frequency offset from the lower/upper Base Station RF Bandwidth edge or sub-block edge inside a sub-block gap (MHz) | Type of interfering signal |
| 3 | ±1.5075 | 3 MHz DFT-s-OFDM NR signal15 kHz SCS, 15 RBs |
| 5 | ±2.5025 |  |
| 7 | ±2.5075 |
| 10 | ±2.5075 | 5 MHz DFT-s-OFDM NR signal, |
| 15 | ±2.5125 | 15 kHz SCS, 25 RBs |
| 20 | ±2.5025 |  |
| 25 | ±9.4675 |  |
| 30 | ±9.4725 |  |
| 35 | ±9.4625 |  |
| 40 | ±9.4675 |  |
| 45 | ±9.4725 |  |
| 50 | ±9.4625 | 20 MHz DFT-s-OFDM NR |
| 60 | ±9.4725 | signal, 15 kHz SCS, 100 RBs |
| 70 | ±9.4675 |  |
| 80 | ±9.4625 |  |
| 90 | ±9.4725 |  |
| 100 | ±9.4675 |  |

Table 7.4.1.5-2a: Base Station ACS interferer frequency offset values for band n46, n96 and n102

|  |  |  |
| --- | --- | --- |
| *BS channel bandwidth* of the *lowest/highest carrier* received (MHz) | Interfering signal centre frequency offset from the lower/upper *Base Station RF Bandwidth edge* or *sub-block* edge inside a *sub-block gap* (MHz) | Type of interfering signal |
| 10 | ±9.4675 |  |
| 20 | ±9.4625 | 20 MHz DFT-s-OFDM NR signal |
| 40 | ±9.4675 | 15 kHz SCS, 100 RBs |
| 60 | ±9.4725 |  |
| 80 | ±9.4625 |  |

\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\* **Unchanged Section Omitted** \*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*

#### 7.4.2.5 Test requirements

The throughput shall be ≥ 95% of the maximum throughput of the reference measurement channel, with a wanted and an interfering signal coupled to *BS type 1-C* *antenna connector* or *BS type 1‑H* *TAB connector* using the parameters in tables 7.4.2.5-1, 7.4.2.5-2 and 7.4.2.5-3 for general blocking and narrowband blocking requirements. Narrowband blocking requirements are not applied for band n46, n96, n102 and n104. The reference measurement channel for the wanted signal is identified in clause 7.2.5 for each channel bandwidth and further specified in annex A.1. The characteristics of the interfering signal is further specified in annex E.

For NB-IoT operation in NR in-band, the throughput shall be ≥ 95% of the maximum throughput of the reference measurement channel, with a wanted and an interfering signal coupled to *BS type 1-C* *antenna connector* using the parameters in tables 7.4.2.5-1, 7.4.2.5-2a and 7.4.2.5-3 for general blocking and narrowband blocking requirements. The reference measurement channel for the NB-IoT wanted signal is identified in clause 7.2.5 of TS 36.141 [24]. The characteristics of the interfering signal is further specified in annex E.

The in-band blocking requirements apply outside the Base Station RF Bandwidth or Radio Bandwidth. The interfering signal offset is defined relative to the Base Station RF Bandwidth edges or Radio Bandwidth edges.

For *BS type 1-C* and *BS type 1-H,* the in-band blocking requirement applies from FUL\_low - ΔfOOB to FUL\_high + ΔfOOB, excluding the downlink frequency range of the *operating band*. The ΔfOOB for *BS type 1-C* and *BS type 1-H* is defined in table 7.4.2.5-0.

Minimum conducted requirement is defined at the *antenna connector* for *BS type 1-C* and at the *TAB connector* for *BS type 1-H.*

Table 7.4.2.5-0: ΔfOOB offset for NR *operating bands*

|  |  |  |
| --- | --- | --- |
| BS type | *Operating band* characteristics | ΔfOOB (MHz) |
| *BS type 1-C* | FUL\_high – FUL\_low ≤ 200 MHz | 20 |
|  | 200 MHz < FUL\_high – FUL\_low ≤ 900 MHz | 60 |
| *BS type 1-H* | FUL\_high – FUL\_low < 100 MHz | 20 |
|  | 100 MHz ≤ FUL\_high – FUL\_low ≤ 900 MHz  | 60 |

For band n46, n96 and n102, ΔfOOB is defined in table 7.4.2.5-0a.

Table 7.4.2.5-0a: ΔfOOB offset for NR *operating bands*

|  |  |
| --- | --- |
| ***Operating band***  | **ΔfOOB (MHz)** |
| n46, n102 | 60  |
| n96 | 70 |

For band n104, ΔfOOB for *BS type 1-C* and *BS type 1-H* is defined in table 7.4.2.5-0b.

Table 7.4.2.5-0b: ΔfOOB offset for NR *operating bands* for band n104

|  |  |  |
| --- | --- | --- |
| BS type | *Operating band*  | ΔfOOB (MHz) |
| *BS type 1-H* | n104 | 100 |
| *BS type 1-C* | n104 | 60 |

For a BS operating in non-contiguous spectrum within any *operating band*, the in-band blocking requirements apply in addition inside any sub-block gap, in case the sub-block gap size is at least as wide as twice the interfering signal minimum offset in table 7.4.2.5-1. The interfering signal offset is defined relative to the sub-block edges inside the sub-block gap.

For a *multi-band connector*, the blocking requirements apply in the in-band blocking frequency ranges for each supported *operating band*. The requirement applies in addition inside any Inter RF Bandwidth gap, in case the Inter RF Bandwidth gap size is at least as wide as twice the interfering signal minimum offset in table 7.4.2.5-1.

For a BS operating in non-contiguous spectrum within any operating band, the narrowband blocking requirement applies in addition inside any sub-block gap, in case the sub-block gap size is at least as wide as the channel bandwidth of the NR interfering signal in table 7.4.2.5-3. The interfering signal offset is defined relative to the sub-block edges inside the sub-block gap.

For a *multi-band connector*, the narrowband blocking requirement applies in addition inside any Inter RF Bandwidth gap, in case the Inter RF Bandwidth gap size is at least as wide as the NR interfering signal in table 7.4.2.5-3. The interfering signal offset is defined relative to the Base Station RF Bandwidth edges inside the Inter RF Bandwidth gap.

Table 7.4.2.5-1: Base station general blocking requirement

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| *BS channel bandwidth* of the lowest/highest carrier received (MHz) | Wanted signal mean power (dBm) (Note 2) | Interfering signal mean power (dBm) | Interfering signal centre frequency minimum offset from the lower/upper Base Station RF Bandwidth edge or sub-block edge inside a sub-block gap (MHz) | Type of interfering signal |
| 3 | PREFSENS + x dB | Wide Area BS: -43Medium Range BS: -38Local Area BS: -35 | ±4.5 | 3 MHz DFT-s-OFDM NR signal15 kHz SCS, 15 RBs |
| 5, 7, 10, 15, 20 | PREFSENS + x dB | Wide Area BS: -43Medium Range BS: -38Local Area BS: -35 | ±7.5 | 5 MHz DFT-s-OFDM NR signal, 15 kHz SCS, 25 RBs |
| 25, 30, 35, 40, 45, 50, 60, 70, 80, 90, 100 | PREFSENS + x dB | Wide Area BS: -43Medium Range BS: -38Local Area BS: -35 | ±30 | 20 MHz DFT-s-OFDM NR signal, 15 kHz SCS, 100 RBs |
| NOTE 1: PREFSENS depends on the RAT. For NR, PREFSENS depends also on the *BS channel bandwidth* as specified in TS 38.104 [2], table 7.2.2-1, 7.2.2-2 and 7.2.2-3. For band n104, PREFSENS depends on the *BS channel bandwidth* as specified in tables 7.2.2-1a, 7.2.2-2c, 7.2.2-3c of TS 38.104[2]. For NB-IoT, PREFSENS depends also on the *sub-carrier spacing* as specified in tables 7.2.1-5, 7.2.1-5a and 7.2.1-5c of TS 36.104 [22].NOTE 2: For a BS capable of single band operation only, "x" is equal to 6 dB. For a BS capable of multi-band operation, "x" is equal to 6 dB in case of interfering signals that are in the in-band blocking frequency range of the operating band where the wanted signal is present or in the in-band blocking frequency range of an adjacent or overlapping operating band. For other in-band blocking frequency ranges of the interfering signal for the supported operating bands, "x" is equal to 1.4 dB. |

Table 7.4.2.5-1a: Base station general blocking requirement for n46

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| BS channel bandwidth of the lowest/highest carrier received (MHz) | Wanted signal mean power (dBm) | Interfering signal mean power (dBm) | Interfering signal centre frequency minimum offset from the lower/upper Base Station RF Bandwidth edge or sub-block edge inside a sub-block gap (MHz) | Type of interfering signal |
| 10, 20, 40, 60, 80 | PREFSENS + 6 dB | Medium Range BS: -38Local Area BS: -35  | ±30 | 20 MHz DFT-s-OFDM NR signal15 kHz SCS, 100 RBs |
| NOTE: PREFSENS depends on the RAT. For NR, PREFSENS depends also on the *BS channel bandwidth* as specified in tables 7.2.2-2a and 7.2.2-3a of TS 38.104[2]. |

Table 7.4.2.5-1b: Base station general blocking requirement for n96 and n102

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| BS channel bandwidth of the lowest/highest carrier received (MHz) | Wanted signal mean power (dBm) | Interfering signal mean power (dBm) | Interfering signal centre frequency minimum offset from the lower/upper Base Station RF Bandwidth edge or sub-block edge inside a sub-block gap (MHz) | Type of interfering signal |
| 20, 40, 60, 80 | PREFSENS + 6 dB | Medium Range BS: -38Local Area BS: -35  | ±30 | 20 MHz DFT-s-OFDM NR signal15 kHz SCS, 100 RBs |
| NOTE: PREFSENS depends on the RAT. For NR, PREFSENS depends also on the *BS channel bandwidth* as specified in tables 7.2.2-2b and 7.2.2-3b of TS 38.104[2].. |

Table 7.4.2.5-2: Base station narrowband blocking requirement

|  |  |  |
| --- | --- | --- |
| *BS channel bandwidth* of the lowest/highest carrier received (MHz) | Wanted signal mean power (dBm) | Interfering signal mean power (dBm) |
| 3, 5, 7, 10, 15, 20, 25, 30, 35, 40, 45, 50, 60, 70, 80, 90, 100(Note 1) | PREFSENS + 6 dB | Wide Area BS: -49Medium Range BS: -44Local Area BS: -41 |
| NOTE 1: The SCS for the lowest/highest carrier received is the lowest SCS supported by the BS for that *BS channel bandwidth*NOTE 2: PREFSENS depends on the *BS channel bandwidth* as specified in TS 38.104 [2], table 7.2.2-1, 7.2.2-2 and 7.2.2-3.NOTE 3: 7.5 kHz shift is not applied to the wanted signal. |

Table 7.4.2.5-2a: Base Station narrowband blocking requirement for NB-IoT operation in NR in-band

|  |  |  |
| --- | --- | --- |
| *BS channel bandwidth* (MHz) | Wanted signal mean power (dBm) | Interfering signal mean power (dBm) |
| 3, 5, 7, 10, 15, 20, 25, 30, 35, 40, 45, 50 | PREFSENS + x dB (Note 2) | Wide Area: -49Medium Range: -44Local Area: -41 |
| NOTE 1: PREFSENS depends on the *sub-carrier spacing* as specified in tables 7.2.1-5, 7.2.1-5a and 7.2.1-5c of TS 36.104 [22].NOTE 2: "x" is equal to 11 in case of 3 MHz channel bandwidth, equal to 8 in case of 5 MHz channel bandwidth and equal to 6 otherwise. |

Table 7.4.2.5-3: Base station narrowband blocking interferer frequency offsets

|  |  |  |
| --- | --- | --- |
| *BS channel bandwidth* of the lowest/highest carrier received (MHz) | Interfering RB centre frequency offset to the lower/upper Base Station RF Bandwidth edge or sub-block edge inside a sub-block gap (kHz)(Note 2) | Type of interfering signal |
| 3 | ±(255+m\*180),m=0, 1, 2, 3, 4, 7, 10, 13 | 3 MHz DFT-s-OFDM NR signal, 15 kHz SCS, 1 RB |
| 5 | ±(350+m\*180),m=0, 1, 2, 3, 4, 9, 14, 19, 24 | 5 MHz DFT-s-OFDM NR signal, 15 kHz SCS, 1 RB |
| 7, 10 | ±(355+m\*180),m=0, 1, 2, 3, 4, 9, 14, 19, 24 |  |
| 15 | ±(360+m\*180),m=0, 1, 2, 3, 4, 9, 14, 19, 24 |  |
| 20 | ±(350+m\*180),m=0, 1, 2, 3, 4, 9, 14, 19, 24 |  |
| 25 | ±(565+m\*180),m=0, 1, 2, 3, 4, 29, 54, 79, 99 | 20 MHz DFT-s-OFDM NR signal, 15 kHz SCS, 1 RB |
| 30 | ±(570+m\*180),m=0, 1, 2, 3, 4, 29, 54, 79, 99 |  |
| 35 | ±(560+m\*180),m=0, 1, 2, 3, 4, 29, 54, 79, 99 |  |
| 40 | ±(565+m\*180),m=0, 1, 2, 3, 4, 29, 54, 79, 99 |  |
| 45 | ±(570+m\*180),m=0, 1, 2, 3, 4, 29, 54, 79, 99 |  |
| 50 | ±(560+m\*180),m=0, 1, 2, 3, 4, 29, 54, 79, 99 |  |
| 60 | ±(570+m\*180),m=0, 1, 2, 3, 4, 29, 54, 79, 99 |  |
| 70 | ±(565+m\*180),m=0, 1, 2, 3, 4, 29, 54, 79, 99 |  |
| 80 | ±(560+m\*180),m=0, 1, 2, 3, 4, 29, 54, 79, 99 |  |
| 90 | ±(570+m\*180),m=0, 1, 2, 3, 4, 29, 54, 79, 99 |  |
| 100 | ±(565+m\*180),m=0, 1, 2, 3, 4, 29, 54, 79, 99 |  |
| NOTE 1: Interfering signal consisting of one resource block positioned at the stated offset, the *channel bandwidth* of the interfering signal is located adjacently to the lower/upper Base Station RF Bandwidth edge or sub-block edge inside a sub-block gap.NOTE 2: The centre of the interfering RB refers to the frequency location between the two central subcarriers. |

\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\* **Unchanged Section Omitted** \*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*

### 7.7.5 Test requirements

The throughputshall be ≥ 95% of the maximum throughput of the reference measurement channel, with a wanted signal at the assigned channel frequency and two interfering signals coupled to the *BS type 1-C antenna connector* or *BS type 1-H* *TAB connector*, with the conditions specified in tables 7.7.5-1 and 7.7.5-2 for intermodulation performance in any operating band except for band n46, n96 and n102, and 7.7.5-1a for band n46, n96 and n102 and in tables 7.7.5-3, and 7.7.5-4 for narrowband intermodulation performance. Narrowband intermodulation requirements are not applied for band n46, n96, n102 and n104. The reference measurement channel for the wanted signal is identified in tables 7.2.5-1 to 7.2.5-3 for each channel bandwidth and further specified in annex A.1. The characteristics of the interfering signal is further specified in annex E.

For NB-IoT operation in NR in-band, the throughputshall be ≥ 95% of the maximum throughput of the reference measurement channel, with a wanted signal at the assigned channel frequency and two interfering signals coupled to the *BS type 1-C antenna connector*, with the conditions specified in tables 7.7.5-1 and 7.7.5-2 for intermodulation performance and in tables 7.7.5-3, and 7.7.5-4 for narrowband intermodulation performance. The reference measurement channel for the NB-IoT wanted signal is identified in clause 7.2.5 of TS 36.141 [24]. The characteristics of the interfering signal is further specified in annex E.

The subcarrier spacing for the modulated interfering signal shall in general be the same as the subcarrier spacing for the wanted signal, except for the case of wanted signal subcarrier spacing 60 kHz and BS channel bandwidth <=20MHz, for which the subcarrier spacing of the interfering signal should be 30 kHz.

The receiver intermodulation requirement is applicable outside the Base Station RF Bandwidth or Radio Bandwidth edges. The interfering signal offset is defined relative to the Base Station RF Bandwidth edges or Radio Bandwidth edges.

For a BS operating in non-contiguous spectrum within any *operating band*, the narrowband intermodulation requirement applies in addition inside any sub-block gap in case the sub-block gap is at least as wide as the channel bandwidth of the NR interfering signal in table 7.7.5-2 or 7.7.5-4. The interfering signal offset is defined relative to the sub-block edges inside the sub-block gap.

For a *multi-band connectors*, the intermodulation requirement applies in addition inside any Inter RF Bandwidth gap, in case the gap size is at least twice as wide as the NR interfering signal centre frequency offset from the Base Station RF Bandwidth edge.

For a *multi-band connectors*, the narrowband intermodulation requirement applies in addition inside any Inter RF Bandwidth gap in case the gap size is at least as wide as the NR interfering signal in tables 7.7.5-2 and 7.7.5-4. The interfering signal offset is defined relative to the Base Station RF Bandwidth edges inside the Inter RF Bandwidth gap.

Table 7.7.5-1: General intermodulation requirement

|  |  |  |  |
| --- | --- | --- | --- |
| Base Station type | Wanted Signal mean power (dBm) | Mean power of interfering signals (dBm) | Type of interfering signals |
| Wide Area BS | PREFSENS + 6 dB  | -52 |  |
| Medium Range BS | PREFSENS + 6 dB  | -47 | See table 7.7.5-2 |
| Local Area BS | PREFSENS + 6 dB  | -44 |  |
| NOTE: PREFSENS depends on the RAT and the BS class. For NR, PREFSENS depends also on the *BS channel bandwidth* as specified inTS 38.104 [2], table 7.2.2-1, 7.2.2-2 and 7.2.2-3. For NB-IoT, PREFSENS depends also on the *sub-carrier spacing* as specified in tables 7.2.1-5, 7.2.1-5a and 7.2.1-5c of TS 36.104 [22].  |

Table 7.7.5-1a: General intermodulation requirement for band n46, n96 and n102

| Base Station Type | Wanted Signal mean power (dBm) | Mean power of interfering signals (dBm) | Type of interfering signals |
| --- | --- | --- | --- |
| Medium Range BS | PREFSENS +6 dB  | -47 | See Table 7.7.5-2a |
| Local Area BS | PREFSENS +6 dB  | -44 |  |
| NOTE: PREFSENS depends on the RAT and the BS class. For NR, PREFSENS depends also on the *BS channel bandwidth*, see clause 7.2.5 of TS 38.104[2]. |

Table 7.7.5-2: Interfering signals for intermodulation requirement

|  |  |  |
| --- | --- | --- |
| *BS channel bandwidth* of the lowest/highest carrier received (MHz) | Interfering signal centre frequency offset from the lower/upper Base Station RF Bandwidth edge (MHz) | Type of interfering signal (Note 3) |
| 3 | ±4.5 | CW |
|  | ±10.5 | 3 MHz DFT-s-OFDM NR signal, 15 kHz SCS, 15 RBs  |
| 5 | ±7.5 | CW |
|  | ±17.5 | 5 MHz DFT-s-OFDM NR signal (Note 1) |
| 7 | ±7.45 | CW |
| ±17.5 | 5 MHz DFT-s-OFDM NR signal (Note 1) |
| 10 | ±7.465 | CW |
|  | ±17.5 | 5 MHz DFT-s-OFDM NR signal (Note 1) |
| 15 | ±7.43 | CW |
|  | ±17.5 | 5 MHz DFT-s-OFDM NR signal (Note 1) |
| 20 | ±7.395 | CW |
|  | ±17.5 | 5 MHz DFT-s-OFDM NR signal, (Note 1) |
| 25 | ±7.465 | CW |
|  | ±25 | 20MHz DFT-s-OFDM NR signal (Note 2) |
| 30 | ±7.43 | CW |
|  | ±25 | 20 MHz DFT-s-OFDM NR signal (Note 2) |
| 35 | ±7.44 | CW |
|  | ±25 | 20 MHz DFT-s-OFDM NR signal (Note 2) |
| 40 | ±7.45 | CW |
|  | ±25 | 20 MHz DFT-s-OFDM NR signal (Note 2) |
| 45 | ±7.37 | CW |
|  | ±25 | 20 MHz DFT-s-OFDM NR signal (Note 2) |
| 50 | ±7.35 | CW |
|  | ±25 | 20 MHz DFT-s-OFDM NR signal (Note 2) |
| 60 | ±7.49 | CW |
|  | ±25 | 20 MHz DFT-s-OFDM NR signal (Note 2) |
| 70 | ±7.42 | CW |
|  | ±25 | 20 MHz DFT-s-OFDM NR signal (Note 2) |
| 80 | ±7.44 | CW |
|  | ±25 | 20 MHz DFT-s-OFDM NR signal (Note 2) |
| 90 | ±7.46 | CW |
|  | ±25 | 20 MHz DFT-s-OFDM NR signal (Note 2) |
| 100 | ±7.48 | CW |
|  | ±25 | 20 MHz DFT-s-OFDM NR signal (Note 2) |
| NOTE 1: For the 15 kHz subcarrier spacing, the number of RB is 25. For the 30 kHz subcarrier spacing, the number of RB is 10.NOTE 2: For the 15 kHz subcarrier spacing, the number of RB is 100. For the 30 kHz subcarrier spacing, the number of RB is 50. For the 60 kHz subcarrier spacing, the number of RB is 24. NOTE 3: The RBs shall be placed adjacent to the transmission bandwidth configuration edge which is closer to the *Base Station RF Bandwidth* edge. |

Table 7.7.5-2a: Interfering signals for intermodulation requirement for band n46, n96 and n102

|  |  |  |
| --- | --- | --- |
| *BS channel bandwidth of the lowest/highest carrier* received (MHz) | Interfering signal centre frequency offset from the lower/upper *Base Station RF Bandwidth* edge (MHz) | Type of interfering signal(Note 2) |
| 10 | ±7.57 | CW (Note 3) |
|  | ±25 | 20 MHz DFT-s-OFDM NR signal (Note 1, 3) |
| 20 | ±7.50 | CW |
|  | ±25 | 20 MHz DFT-s-OFDM NR signal (Note 1) |
| 40 | ±7.45 | CW |
|  | ±25 | 20 MHz DFT-s-OFDM NR signal (Note 1) |
| 60 | ±7.49 | CW |
|  | ±25 | 20 MHz DFT-s-OFDM NR signal (Note 1) |
| 80 | ±7.44 | CW |
|  | ±25 | 20 MHz DFT-s-OFDM NR signal (Note 1) |
| NOTE 1: Number of RBs is 100 for 15 kHz subcarrier spacing and 50 for 30 kHz subcarrier spacing.NOTE 2: The RBs shall be placed adjacent to the transmission bandwidth configuration edge which is closer to the *Base Station RF Bandwidth* edge.NOTE 3: This type of interfering signal is only applied for band n46, n96 and n102. |

Table 7.7.5-3: Narrowband intermodulation performance requirement in FR1

|  |  |  |  |
| --- | --- | --- | --- |
| BS type | Wanted signal mean power (dBm)(Note 1) | Mean power of interfering signals (dBm) | Type of interfering signal |
| Wide Area BS | PREFSENS + 6 dB | -52 |  |
| Medium Range BS | PREFSENS + 6 dB | -47 | See table 7.7.5-4 |
| Local Area BS | PREFSENS + 6 dB | -44 |  |
| NOTE 1: PREFSENS depends on the RAT. For NR, PREFSENS depends also on the *BS channel bandwidth* as specified in TS 38.104 [2], table 7.2.2-1, 7.2.2-2 and 7.2.2-3. For NB-IoT, PREFSENS depends also on the *sub-carrier spacing* as specified in tables 7.2.1-5, 7.2.1-5a and 7.2.1-5c of TS 36.104 [22].NOTE 2: For NB-IoT, the requirement shall apply only for a FRC A1-3 of TS 36.141 [24] mapped to the frequency range at the channel edge adjacent to the interfering signals.NOTE 3: For NB-IoT, the frequency offset shall be adjusted to accommodate the IMD product to fall in the NB-IoT RB for NB-IoT operation in NR in-band.NOTE 4: For NB-IoT, if a BS RF receiver fails the test of the requirement, the test shall be performed with the CW interfering signal frequency shifted away from the wanted signal by 180 kHz and the NR interfering signal frequency shifted away from the wanted signal by 360 kHz. If the BS RF receiver still fails the test after the frequency shift, then the BS RF receiver shall be deemed to fail the requirement. |

Table 7.7.5-4: Interfering signals for narrowband intermodulation requirement in FR1

|  |  |  |
| --- | --- | --- |
| *BS channel bandwidth* of the lowest/highest carrier received (MHz) | Interfering RB centre frequency offset from the lower/upper Base Station RF Bandwidth edge or sub-block edge inside a sub-block gap (kHz) (Note 3) | Type of interfering signals |
| 3 | ±360 | CW |
|  | ±960 | 3 MHz DFT-s-OFDM NR signal, 15 kHz SCS, 1 RB (Note 1) |
| 5 | ±360 | CW |
|  | ±1420 | 5 MHz DFT-s-OFDM NR signal, 1 RB (Note 1) |
| 7 | ±400 | CW |
| ±1240 | 5 MHz DFT-s-OFDM NR signal, 1 RB (Note 1) |
| 10 | ±370 | CW |
|  | ±1960 | 5 MHz DFT-s-OFDM NR signal, 1 RB (Note 1) |
| 15 (Note 2) | ±380 | CW |
|  | ±1960 | 5 MHz DFT-s-OFDM NR signal, 1 RB (Note 1) |
| 20 (Note 2) | ±390 | CW |
|  | ±2320 | 5 MHz DFT-s-OFDM NR signal, 1 RB (Note 1) |
| 25 (Note 2) | ±325 | CW |
|  | ±2350 | 20 MHz DFT-s-OFDM NR signal, 1 RB (Note 1) |
| 30 (Note 2) | ±335 | CW |
|  | ±2350 | 20 MHz DFT-s-OFDM NR signal, 1 RB (Note 1) |
| 35 (Note 2) | ±345 | CW |
|  | ±2350 | 20MHz DFT-s-OFDM NR signal, 1 RB (Note 1) |
| 40 (Note 2) | ±355 | CW |
|  | ±2710 | 20 MHz DFT-s-OFDM NR signal, 1 RB (Note 1) |
| 45 (Note 2) | ±365 | CW |
|  | ±2710 | 20MHz DFT-s-OFDM NR signal, 1 RB (Note 1) |
| 50 (Note 2) | ±375 | CW |
|  | ±2710 | 20 MHz DFT-s-OFDM NR signal, 1 RB (Note 1) |
| 60 (Note 2) | ±395 | CW |
|  | ±2710 | 20 MHz DFT-s-OFDM NR signal, 1 RB (Note 1) |
| 70 (Note 2) | ±415 | CW |
|  | ±2710 | 20 MHz DFT-s-OFDM NR signal, 1 RB (Note 1) |
| 80 (Note 2) | ±435 | CW |
|  | ±2710 | 20 MHz DFT-s-OFDM NR signal, 1 RB (Note 1) |
| 90 (Note 2) | ±365 | CW |
|  | ±2530 | 20 MHz DFT-s-OFDM NR signal, 1 RB (Note 1) |
| 100 (Note 2) | ±385 | CW |
|  | ±2530 | 20 MHz DFT-s-OFDM NR signal, 1 RB (Note 1) |
| Note 1: Interfering signal consisting of one resource block positioned at the stated offset, the *BS channel bandwidth* of the interfering signal is located adjacently to the lower/upper Base Station RF Bandwidth edge or sub-block edge inside a sub-block gap.Note 2: This requirement shall apply only for a G-FRC mapped to the frequency range at the channel edge adjacent to the interfering signals.Note 3: The centre of the interfering RB refers to the frequency location between the two central subcarriers. |

\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\* **Unchanged Section Omitted** \*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*

### 7.8.5 Test requirements

For *BS type 1-C* and *BS type 1-H*, the throughput shall be ≥ 95% of the maximum throughput of the reference measurement channel as specified in annex A.1 with parameters specified in table 7.8.5-1 for Wide Area BS except for band n104, in table 7.8.5-1b for Wide Area BS for band n104, in table 7.8.5-2 for Medium Range BS except for band n46, n96, n102 and n104, in table 7.8.5-2b for Medium Range BS for band n46, in table 7.8.5-2c for Medium Range BS for band n96 and n102, in table 7.8.5-2d for Medium Range BS for band n104, in table 7.8.5-3 for Local Area BS except for band n46, n96, n102 and n104, in table 7.8.5-3b for Local Area BS for band n46, in table 7.8.5-3c for Local Area BS for band n96 and n102, and in table 7.8.5-3d for Local Area BS for band 104. The characteristics of the interfering signal is further specified in annex E.

For NB-IoT operation in NR in-band, the throughput shall be ≥ 95% of the maximum throughput of the NB-IoT reference measurement channel as specified in Annex A of TS 36.141 [24] with parameters specified in table 7.8.5-1a for Wide Area BS, in table 7.8.5-2a for Medium Range BS and in table 7.8.5-3a for Local Area BS.

Table 7.8.5-1: Wide Area BS in-channel selectivity

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| NR channel bandwidth | Subcarrier spacing | Reference measurement | Wanted signal mean power (dBm) | Interfering signal mean | Type of interfering signal |
| (MHz) | (kHz) | channel | f ≤ 3.0 GHz | 3.0 GHz < f ≤ 4.2 GHz | 4.2 GHz < f ≤ 6.0 GHz | power (dBm) |  |
| 3 | 15 | G-FR1-A1-20 | -101.4 | -101 | -100.7 | -83.6 | DFT-s-OFDM NR signal, 15 kHz SCS, 6 RBs |
| 5 | 15 | G-FR1-A1-7 | -99.2 | -98.8 | -98.5 | -81.4 | DFT-s-OFDM NR signal, 15 kHz SCS, 10 RBs |
| 7 | 15 | G-FR1-A1-7 | -99.2 | -98.8 | -98.5 | -79.6 | DFT-s-OFDM NR signal, 15 kHz SCS, 15 RBs |
| 10, 15, 20, 25, 30,35 | 15 | G-FR1-A1-1 | -97.3 | -96.9 | -96.6 | -77.4 | DFT-s-OFDM NR signal, 15 kHz SCS, 25 RBs |
| 40, 45, 50 | 15 | G-FR1-A1-4 | -90.9 | -90.5 | -90.2 | -71.4 | DFT-s-OFDM NR signal, 15 kHz SCS, 100 RBs |
| 5 | 30 | G-FR1-A1-8 | -99.9 | -99.5 | -99.2 | -81.4 | DFT-s-OFDM NR signal, 30 kHz SCS, 5 RBs |
| 10, 15, 20, 25, 30,35  | 30 | G-FR1-A1-2 | -97.4 | -97 | -96.7 | -78.4 | DFT-s-OFDM NR signal, 30 kHz SCS, 10 RBs |
| 40, 45, 50, 60, 70, 80, 90, 100 | 30 | G-FR1-A1-5 | -91.2 | -90.8 | -90.5 | -71.4 | DFT-s-OFDM NR signal, 30 kHz SCS, 50 RBs |
| 10, 15, 20, 25, 30, 35 | 60 | G-FR1-A1-9 | -96.8 | -96.4 | -96.1 | -78.4 | DFT-s-OFDM NR signal, 60 kHz SCS, 5 RBs |
| 40, 45, 50, 60, 70, 80, 90, 100 | 60 | G-FR1-A1-6 | -91.3 | -90.9 | -90.6 | -71.6 | DFT-s-OFDM NR signal, 60 kHz SCS, 24 RBs |
| NOTE: Wanted and interfering signal are placed adjacently around Fc, where the Fc is defined for *BS channel bandwidth* of the wanted signalaccording to the table 5.4.2.2-1 in TS 38.104 [2]. The aggregated wanted and interferer signal shall be centred in the BS channel bandwidth of the wanted signal. |

Table 7.8.5-1a: Wide Area BS in-channel selectivity for NB-IoT operation in NR in-band

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| *BS channel bandwidth* (MHz) | Reference measurement channel | Wanted signal mean power (dBm) | Interfering signal mean power (dBm) / BWConfig | Type of interfering signal |
| 3 | FRC A14-1 in Annex A.14 in TS 36.141 [24] | -122.9 | -83.6 | DFT-s-OFDM NR signal, 15 kHz SCS, 6 RBs |
| 5 |  |  | -81.4 | DFT-s-OFDM NR signal, 15 kHz SCS,10 RBs |
| 7 |  |  | -79.6 | DFT-s-OFDM NR signal, 15 kHz SCS,15 RBs |
| 10, 15, 20, 25, 30, 35 |  |  | -77.4 | DFT-s-OFDM NR signal, 15 kHz SCS,25 RBs |
| 40, 45, 50 |  |  | -71.4 | DFT-s-OFDM NR signal, 15 kHz SCS, 100 RBs |
| 3 | FRC A14-2 in Annex A.14 in TS 36.141 [24] | -128.8 | -83.6 | DFT-s-OFDM NR signal, 15 kHz SCS, 6 RBs |
| 5 |  |  | -81.4 | DFT-s-OFDM NR signal, 15 kHz SCS,10 RBs |
| 7 |  |  | -79.6 | DFT-s-OFDM NR signal, 15 kHz SCS,15 RBs |
| 10, 15, 20, 25, 30, 35 |  |  | -77.4 | DFT-s-OFDM NR signal, 15 kHz SCS,25 RBs |
| 40, 45, 50 |  |  | -71.4 | DFT-s-OFDM NR signal, 15 kHz SCS, 100 RBs |
| NOTE: Interfering signal is placed in one side of the Fc, while the NB-IoT PRB is placed on the other side. Both interfering signal and NB-IoT PRB are placed at the middle of the available PRB locations. The wanted NB-IoT tone is placed at the centre of this NB-IoT PRB. |

Table 7.8.5-1b: Wide Area BS in-channel selectivity for band n104

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| *BS channel bandwidth* (MHz) | Subcarrier spacing (kHz) | Reference measurement channel | Wanted signal mean power (dBm)  | Interfering signal mean power (dBm)  | Type of interfering signal |
| 20, 30 | 15 | G-FR1-A1-1 | -95.2 | -76.4 | DFT-s-OFDM NR signal, 15 kHz SCS,25 RBs |
| 40, 50 | 15 | G-FR1-A1-4 | -88.8 | -70.4 | DFT-s-OFDM NR signal, 15 kHz SCS, 100 RBs |
| 20, 30 | 30 | G-FR1-A1-2 | -95.3 | -77.4 | DFT-s-OFDM NR signal, 30 kHz SCS,10 RBs |
| 40, 50, 60, 70, 80, 90, 100 | 30 | G-FR1-A1-5 | -89.1 | -70.4 | DFT-s-OFDM NR signal, 30 kHz SCS,50 RBs |
| 20, 30 | 60 | G-FR1-A1-9 | -94.7 | -77.4 | DFT-s-OFDM NR signal, 60 kHz SCS,5 RBs |
| 40, 50, 60, 70, 80, 90, 100 | 60 | G-FR1-A1-6 | -89.2 | -70.6 | DFT-s-OFDM NR signal, 60 kHz SCS,24 RBs |
| NOTE 1: Wanted and interfering signal are placed adjacently around Fc, where the Fc is defined for *BS channel bandwidth* ofthe wanted signalaccording to the table 5.4.2.2-1. The aggregated wanted and interferer signal shall be centred in the *BS channel bandwidth* of the wanted signal. |

Table 7.8.5-2: Medium Range BS in-channel selectivity

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| NR channel bandwidth | Subcarrier spacing | Reference measurement | Wanted signal mean power (dBm) | Interfering signal mean | Type of interfering signal |
| (MHz) | (kHz) | channel | f ≤ 3.0 GHz | 3.0 GHz < f ≤ 4.2 GHz | 4.2 GHz < f ≤ 6.0 GHz | power (dBm) |  |
| 3 | 15 | G-FR1-A1-20 | -96.4 | -96 | -95.7 | -78.6 | DFT-s-OFDM NR signal, 15 kHz SCS, 6 RBs |
| 5 | 15 | G-FR1-A1-7 | -94.2 | -93.8 | -93.5 | -76.4 | DFT-s-OFDM NR signal, 15 kHz SCS, 10 RBs |
| 7 | 15 | G-FR1-A1-7 | -94.2 | -93.8 | -93.5 | -74.6 | DFT-s-OFDM NR signal, 15 kHz SCS, 15 RBs |
| 10, 15, 20, 25, 30, 35 | 15 | G-FR1-A1-1 | -92.3 | -91.9 | -91.6 | -72.4 | DFT-s-OFDM NR signal, 15 kHz SCS, 25 RBs |
| 40, 45, 50 | 15 | G-FR1-A1-4 | -85.9 | -85.5 | -85.2 | -66.4 | DFT-s-OFDM NR signal, 15 kHz SCS, 100 RBs |
| 5 | 30 | G-FR1-A1-8 | -94.9 | -94.5 | -94.2 | -76.4 | DFT-s-OFDM NR signal, 30 kHz SCS, 5 RBs |
| 10, 15, 20, 25, 30, 35  | 30 | G-FR1-A1-2 | -92.4 | -92 | -91.7 | -73.4 | DFT-s-OFDM NR signal, 30 kHz SCS, 10 RBs |
| 40, 45, 50, 60, 70, 80, 90, 100 | 30 | G-FR1-A1-5 | -86.2 | -85.8 | -85.5 | -66.4 | DFT-s-OFDM NR signal, 30 kHz SCS, 50 RBs |
| 10, 15, 20, 25, 30, 35 | 60 | G-FR1-A1-9 | -91.8 | -91.4 | -91.1 | -73.4 | DFT-s-OFDM NR signal, 60 kHz SCS, 5 RBs |
| 40, 45, 50, 60, 70, 80, 90, 100 | 60 | G-FR1-A1-6 | -86.3 | -85.9 | -85.6 | -66.6 | DFT-s-OFDM NR signal, 60 kHz SCS, 24 RBs |
| NOTE: Wanted and interfering signal are placed adjacently around Fc, where the Fc is defined for *BS channel bandwidth* of the wanted signalaccording to the table 5.4.2.2-1 in TS 38.104 [2]. The aggregated wanted and interferer signal shall be centred in the BS channel bandwidth of the wanted signal. |

Table 7.8.5-2a: Medium Range BS in-channel selectivity for NB-IoT operation in NR in-band

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| *BS channel bandwidth* (MHz) | Reference measurement channel | Wanted signal mean power (dBm) | Interfering signal mean power (dBm) / BWConfig | Type of interfering signal |
| 3 | FRC A14-1 in Annex A.14 in TS 36.141 [24] | -117.9 | -78.6 | DFT-s-OFDM NR signal, 15 kHz SCS, 6 RBs |
| 5 |  |  | -76.4 | DFT-s-OFDM NR signal, 15 kHz SCS,10 RBs |
| 7 |  |  | -74.6 | DFT-s-OFDM NR signal, 15 kHz SCS,15 RBs |
| 10, 15, 20, 25, 30, 35 |  |  | -72.4 | DFT-s-OFDM NR signal, 15 kHz SCS,25 RBs |
| 40, 45, 50 |  |  | -66.4 | DFT-s-OFDM NR signal, 15 kHz SCS, 100 RBs |
| 3 | FRC A14-2 in Annex A.14 in TS 36.141 [24] | -123.8 | -78.6 | DFT-s-OFDM NR signal, 15 kHz SCS, 6 RBs |
| 5 |  |  | -76.4 | DFT-s-OFDM NR signal, 15 kHz SCS,10 RBs |
| 7 |  |  | -74.6 | DFT-s-OFDM NR signal, 15 kHz SCS,15 RBs |
| 10, 15, 20, 25, 30, 35 |  |  | -72.4 | DFT-s-OFDM NR signal, 15 kHz SCS,25 RBs |
| 40, 45, 50 |  |  | -66.4 | DFT-s-OFDM NR signal, 15 kHz SCS, 100 RBs |
| NOTE: Interfering signal is placed in one side of the Fc, while the NB-IoT PRB is placed on the other side. Both interfering signal and NB-IoT PRB are placed at the middle of the available PRB locations. The wanted NB-IoT tone is placed at the centre of this NB-IoT PRB. |

Table 7.8.5-2b: Medium Range BS in-channel selectivity for band n46

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| *BS channel bandwidth* (MHz) | Subcarrier spacing (kHz) | Reference measurement channel | Wanted signal mean power (dBm) | Interfering signal mean power (dBm) | Type of interfering signal |
| 10 | 15 | G-FR1-A1-12 | -97.5 | -79.5 | CP-OFDM NR signal, 15 kHz SCS,10 RBs |
|  | 30 | G-FR1-A1-13 | -95.2 | -77.4 | CP-OFDM NR signal, 30 kHz SCS,10 RBs |
|  | 60 | G-FR1-A1-9 | -90.7 | -73.4 | DFT-s-OFDM NR signal, 60 kHz SCS, 5 RBs |
| 20 | 15 | G-FR1-A1-14 | -94.6 | -76.4 | CP-OFDM NR signal, 15 kHz SCS,10 RBs |
|  | 30 | G-FR1-A1-15 | -91.6 | -73.4 | CP-OFDM NR signal, 30 kHz SCS,10 RBs |
|  | 60 | G-FR1-A1-9 | -90.7 | -73.4 | DFT-s-OFDM NR signal, 60 kHz SCS, 5 RBs |
| 40 | 15 | G-FR1-A1-16 | -91.5 | -73.2 | CP-OFDM NR signal, 15 kHz SCS,20 RBs |
|  | 30 | G-FR1-A1-17 | -88.5 | -70.2 | CP-OFDM NR signal, 30 kHz SCS,10 RBs |
|  | 60 | G-FR1-A1-6 | -85.2 | -66.6 | DFT-s-OFDM NR signal, 60 kHz SCS,24 RBs |
| 60 | 30 | G-FR1-A1-18 | -86.9 | -68.4 | CP-OFDM NR signal, 30 kHz SCS,20 RBs |
|  | 60 | G-FR1-A1-6 | -85.2 | -66.6 | DFT-s-OFDM NR signal, 60 kHz SCS,24 RBs |
| 80 | 30 | G-FR1-A1-19 | -85.6 | -67.1 | CP-OFDM NR signal, 30 kHz SCS,20 RBs |
|  | 60 | G-FR1-A1-6 | -85.2 | -66.6 | DFT-s-OFDM NR signal, 60 kHz SCS,24 RBs |
| NOTE: Wanted and interfering signal are placed adjacently around Fc, where the Fc is defined for *BS channel bandwidth* of the wanted signalaccording to the table 5.4.2.2-1. The aggregated wanted and interferer signal shall be centred in the BS channel bandwidth of the wanted signal. |

Table 7.8.5-2c: Medium Range BS in-channel selectivity for band n96 and n102

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| *BS channel bandwidth* (MHz) | Subcarrier spacing (kHz) | Reference measurement channel | Wanted signal mean power (dBm) | Interfering signal mean power (dBm) | Type of interfering signal |
| 20 | 15 | G-FR1-A1-14 | -93.6 | -75.4 | CP-OFDM NR signal, 15 kHz SCS,10 RBs |
|  | 30 | G-FR1-A1-15 | -90.6 | -72.4 | CP-OFDM NR signal, 30 kHz SCS,10 RBs |
|  | 60 | G-FR1-A1-9 | -89.7 | -72.4 | DFT-s-OFDM NR signal, 60 kHz SCS, 5 RBs |
| 40 | 15 | G-FR1-A1-16 | -90.5 | -72.2 | CP-OFDM NR signal, 15 kHz SCS,20 RBs |
|  | 30 | G-FR1-A1-17 | -87.5 | -69.2 | CP-OFDM NR signal, 30 kHz SCS,10 RBs |
|  | 60 | G-FR1-A1-6 | -84.2 | -65.6 | DFT-s-OFDM NR signal, 60 kHz SCS,24 RBs |
| 60 | 30 | G-FR1-A1-18 | -85.9 | -67.4 | CP-OFDM NR signal, 30 kHz SCS,20 RBs |
|  | 60 | G-FR1-A1-6 | -84.2 | -65.6 | DFT-s-OFDM NR signal, 60 kHz SCS,24 RBs |
| 80 | 30 | G-FR1-A1-19 | -84.6 | -66.1 | CP-OFDM NR signal, 30 kHz SCS,20 RBs |
|  | 60 | G-FR1-A1-6 | -84.2 | -65.6 | DFT-s-OFDM NR signal, 60 kHz SCS,24 RBs |
| NOTE: Wanted and interfering signal are placed adjacently around Fc, where the Fc is defined for *BS channel bandwidth* of the wanted signalaccording to the table 5.4.2.2-1. The aggregated wanted and interferer signal shall be centred in the BS channel bandwidth of the wanted signal. |

Table 7.8.5-2d: Medium Range BS in-channel selectivity for band n104

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| *BS channel bandwidth* (MHz) | Subcarrier spacing (kHz) | Reference measurement channel | Wanted signal mean power (dBm) | Interfering signal mean power (dBm) | Type of interfering signal |
| 20, 30 | 15 | G-FR1-A1-1 | -90.2 | -71.4 | DFT-s-OFDM NR signal, 15 kHz SCS,25 RBs |
| 40, 50 | 15 | G-FR1-A1-4 | -83.8 | -65.4 | DFT-s-OFDM NR signal, 15 kHz SCS,100 RBs |
| 20, 30 | 30 | G-FR1-A1-2 | -90.3 | -72.4 | DFT-s-OFDM NR signal, 30 kHz SCS,10 RBs |
| 40, 50, 60, 70, 80, 90, 100 | 30 | G-FR1-A1-5 | -84.1 | -65.4 | DFT-s-OFDM NR signal, 30 kHz SCS,50 RBs |
| 20, 30 | 60 | G-FR1-A1-9 | -89.7 | -72.4 | DFT-s-OFDM NR signal, 60 kHz SCS,5 RBs |
| 40, 50, 60, 70, 80, 90, 100 | 60 | G-FR1-A1-6 | -84.2 | -65.6 | DFT-s-OFDM NR signal, 60 kHz SCS,24 RBs |
| NOTE: Wanted and interfering signal are placed adjacently around Fc, where the Fc is defined for *BS channel bandwidth* of the wanted signalaccording to the table 5.4.2.2-1. The aggregated wanted and interferer signal shall be centred in the *BS channel bandwidth* of the wanted signal. |

Table 7.8.5-3: Local area BS in-channel selectivity

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| NR channel bandwidth | Subcarrier spacing | Reference measurement | Wanted signal mean power (dBm) | Interfering signal mean | Type of interfering signal |
| (MHz) | (kHz) | channel | f ≤ 3.0 GHz | 3.0 GHz < f ≤ 4.2 GHz | 4.2 GHz < f ≤ 6.0 GHz | power (dBm) |  |
| 3 | 15 | G-FR1-A1-20 | -93.4 | -93 | -92.7 | -75.6 | DFT-s-OFDM NR signal, 15 kHz SCS, 6 RBs |
| 5 | 15 | G-FR1-A1-7 | -91.2 | -90.8 | -90.5 | -73.4 | DFT-s-OFDM NR signal, 15 kHz SCS, 10 RBs |
| 7 | 15 | G-FR1-A1-7 | -91.2 | -90.8 | -90.5 | -71.6 | DFT-s-OFDM NR signal, 15 kHz SCS, 15 RBs |
| 10, 15, 20, 25, 30, 35 | 15 | G-FR1-A1-1 | -89.3 | -88.9 | -88.6 | -69.4 | DFT-s-OFDM NR signal, 15 kHz SCS, 25 RB |
| 40, 45, 50 | 15 | G-FR1-A1-4 | -82.9 | -82.5 | -82.2 | -63.4 | DFT-s-OFDM NR signal, 15 kHz SCS, 100 RBs |
| 5 | 30 | G-FR1-A1-8 | -91.9 | -91.5 | -91.2 | -73.4 | DFT-s-OFDM NR signal, 30 kHz SCS, 5 RBs |
| 10, 15, 20, 25, 30, 35 | 30 | G-FR1-A1-2 | -89.4 | -89 | -88.7 | -70.4 | DFT-s-OFDM NR signal, 30 kHz SCS, 10 RBs |
| 40, 45, 50, 60, 70, 80, 90, 100 | 30 | G-FR1-A1-5 | -83.2 | -82.8 | -82.5 | -63.4 | DFT-s-OFDM NR signal, 30 kHz SCS, 50 RBs |
| 10, 15, 20, 25, 30, 35 | 60 | G-FR1-A1-9 | -88.8 | -88.4 | -88.1 | -70.4 | DFT-s-OFDM NR signal, 60 kHz SCS, 5 RBs |
| 40, 45, 50, 60, 70, 80, 90, 100 | 60 | G-FR1-A1-6 | -83.3 | -82.9 | -82.6 | -63.6 | DFT-s-OFDM NR signal, 60 kHz SCS, 24 RBs |
| NOTE: Wanted and interfering signal are placed adjacently around Fc, where the Fc is defined for *BS channel bandwidth* of the wanted signal according to the table 5.4.2.2-1 in TS 38.104 [2]. The aggregated wanted and interferer signal shall be centred in the BS channel bandwidth of the wanted signal. |

Table 7.8.5-3a: Local Area BS in-channel selectivity for NB-IoT operation in NR in-band

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| *BS channel bandwidth* (MHz) | Reference measurement channel | Wanted signal mean power (dBm) | Interfering signal mean power (dBm) / BWConfig | Type of interfering signal |
| 3 | FRC A14-1 in Annex A.14 in TS 36.104 [13] | -114.9 | -75.6 | DFT-s-OFDM NR signal, 15 kHz SCS, 6 RBs |
| 5 |  |  | -73.4 | DFT-s-OFDM NR signal, 15 kHz SCS,10 RBs |
| 7 |  |  | -71.6 | DFT-s-OFDM NR signal, 15 kHz SCS,15 RBs |
| 10, 15, 20, 25, 30, 35 |  |  | -69.4 | DFT-s-OFDM NR signal, 15 kHz SCS,25 RBs |
| 40, 45, 50 |  |  | -63.4 | DFT-s-OFDM NR signal, 15 kHz SCS, 100 RBs |
| 3 | FRC A14-2 in Annex A.14 in TS 36.104 [13] | -120.8 | -75.6 | DFT-s-OFDM NR signal, 15 kHz SCS, 6 RBs |
| 5 |  |  | -73.4 | DFT-s-OFDM NR signal, 15 kHz SCS,10 RBs |
| 7 |  |  | -71.6 | DFT-s-OFDM NR signal, 15 kHz SCS,15 RBs |
| 10, 15, 20, 25, 30, 35 |  |  | -69.4 | DFT-s-OFDM NR signal, 15 kHz SCS,25 RBs |
| 40, 45, 50 |  |  | -63.4 | DFT-s-OFDM NR signal, 15 kHz SCS, 100 RBs |
| NOTE: Interfering signal is placed in one side of the Fc, while the NB-IoT PRB is placed on the other side. Both interfering signal and NB-IoT PRB are placed at the middle of the available PRB locations. The wanted NB-IoT tone is placed at the centre of this NB-IoT PRB. |

Table 7.8.5-3b: Local Area BS in-channel selectivity for band n46

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| *BS channel bandwidth* (MHz) | Subcarrier spacing (kHz) | Reference measurement channel | Wanted signal mean power (dBm) | Interfering signal mean power (dBm) | Type of interfering signal |
| 10 | 15 | G-FR1-A1-12 | -94.5 | -76.5 | CP-OFDM NR signal, 15 kHz SCS,10 RBs |
|  | 30 | G-FR1-A1-13 | -92.2 | -74.4 | CP-OFDM NR signal, 30 kHz SCS,10 RBs |
|  | 60 | G-FR1-A1-9 | -87.7 | -70.4 | DFT-s-OFDM NR signal, 60 kHz SCS,5 RBs |
| 20 | 15 | G-FR1-A1-14 | -91.6 | -73.4 | CP-OFDM NR signal, 15 kHz SCS,10 RBs |
|  | 30 | G-FR1-A1-15 | -88.6 | -70.4 | CP-OFDM NR signal, 30 kHz SCS,10 RBs |
|  | 60 | G-FR1-A1-9 | -87.7 | -70.4 | DFT-s-OFDM NR signal, 60 kHz SCS,5 RBs |
| 40 | 15 | G-FR1-A1-16 | -88.5 | -70.2 | CP-OFDM NR signal, 15 kHz SCS,20 RBs |
|  | 30 | G-FR1-A1-17 | -85.5 | -67.2 | CP-OFDM NR signal, 30 kHz SCS,10 RBs |
|  | 60 | G-FR1-A1-6 | -82.2 | -63.6 | DFT-s-OFDM NR signal, 60 kHz SCS,24 RBs |
| 60 | 30 | G-FR1-A1-18 | -83.9 | -65.4 | CP-OFDM NR signal, 30 kHz SCS,20 RBs |
|  | 60 | G-FR1-A1-6 | -82.2 | -63.6 | DFT-s-OFDM NR signal, 60 kHz SCS,24 RBs |
| 80 | 30 | G-FR1-A1-19 | -82.6 | -64.1 | CP-OFDM NR signal, 30 kHz SCS,20 RBs |
|  | 60 | G-FR1-A1-6 | -82.2 | -63.6 | DFT-s-OFDM NR signal, 60 kHz SCS,24 RBs |
| NOTE: Wanted and interfering signal are placed adjacently around Fc, where the Fc is defined for BS channel bandwidth of the wanted signal according to the table 5.4.2.2-1. The aggregated wanted and interferer signal shall be centred in the BS channel bandwidth of the wanted signal. |

Table 7.8.5-3c: Local Area BS in-channel selectivity for band n96 and n102

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| *BS channel bandwidth* (MHz) | Subcarrier spacing (kHz) | Reference measurement channel | Wanted signal mean power (dBm) | Interfering signal mean power (dBm) | Type of interfering signal |
| 20 | 15 | G-FR1-A1-14 | -90.6 | -72.4 | CP-OFDM NR signal, 15 kHz SCS,10 RBs |
|  | 30 | G-FR1-A1-15 | -87.6 | -69.4 | CP-OFDM NR signal, 30 kHz SCS,10 RBs |
|  | 60 | G-FR1-A1-9 | -86.7 | -69.4 | DFT-s-OFDM NR signal, 60 kHz SCS,5 RBs |
| 40 | 15 | G-FR1-A1-16 | -87.5 | -69.2 | CP-OFDM NR signal, 15 kHz SCS,20 RBs |
|  | 30 | G-FR1-A1-17 | -84.5 | -66.2 | CP-OFDM NR signal, 30 kHz SCS,10 RBs |
|  | 60 | G-FR1-A1-6 | -81.2 | -62.6 | DFT-s-OFDM NR signal, 60 kHz SCS,24 RBs |
| 60 | 30 | G-FR1-A1-18 | -82.9 | -64.4 | CP-OFDM NR signal, 30 kHz SCS,20 RBs |
|  | 60 | G-FR1-A1-6 | -81.2 | -62.6 | DFT-s-OFDM NR signal, 60 kHz SCS,24 RBs |
| 80 | 30 | G-FR1-A1-19 | -81.6 | -63.1 | CP-OFDM NR signal, 30 kHz SCS,20 RBs |
|  | 60 | G-FR1-A1-6 | -81.2 | -62.6 | DFT-s-OFDM NR signal, 60 kHz SCS,24 RBs |
| NOTE: Wanted and interfering signal are placed adjacently around Fc, where the Fc is defined for *BS channel bandwidth* of the wanted signalaccording to the table 5.4.2.2-1. The aggregated wanted and interferer signal shall be centred in the BS channel bandwidth of the wanted signal. |

Table 7.8.5-3d: Local area BS in-channel selectivity for band n104

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| *BS channel bandwidth* (MHz) | Subcarrier spacing (kHz) | Reference measurement channel | Wanted signal mean power (dBm) | Interfering signal mean power (dBm) | Type of interfering signal |
| 20, 30 | 15 | G-FR1-A1-1 | -87.2 | -68.4 | DFT-s-OFDM NR signal, 15 kHz SCS,25 RBs |
| 40, 50 | 15 | G-FR1-A1-4 | -80.8 | -62.4 | DFT-s-OFDM NR signal, 15 kHz SCS, 100 RBs |
| 20, 30 | 30 | G-FR1-A1-2 | -87.3 | -69.4 | DFT-s-OFDM NR signal, 30 kHz SCS,10 RBs |
| 40, 50, 60, 70, 80, 90, 100 | 30 | G-FR1-A1-5 | -81.1 | -62.4 | DFT-s-OFDM NR signal, 30 kHz SCS,50 RBs |
| 20, 30 | 60 | G-FR1-A1-9 | -86.7 | -69.4 | DFT-s-OFDM NR signal, 60 kHz SCS,5 RBs |
| 40, 50, 60, 70, 80, 90, 100 | 60 | G-FR1-A1-6 | -81.2 | -62.6 | DFT-s-OFDM NR signal, 60 kHz SCS,24 RBs |
| NOTE: Wanted and interfering signal are placed adjacently around Fc, where the Fc is defined for *BS channel bandwidth* of the wanted signal according to the table 5.4.2.2-1. The aggregated wanted and interferer signal shall be centred in the *BS channel bandwidth* of the wanted signal. |

\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\* **< END OF CHANGE >** \*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*